THE

MILITARY ASPECT OF CANADA.

BY

LIEUT.-COLONEL T. B. STRANGE, R.A.,

DOMINION INSPECTOR OF ARTILLERY.

A LECTURE DELIVERED AT THE ROYAL UNITED SERVICE INSTITUTION.

(Authors alone are responsible for the contents of their respective memoirs.)

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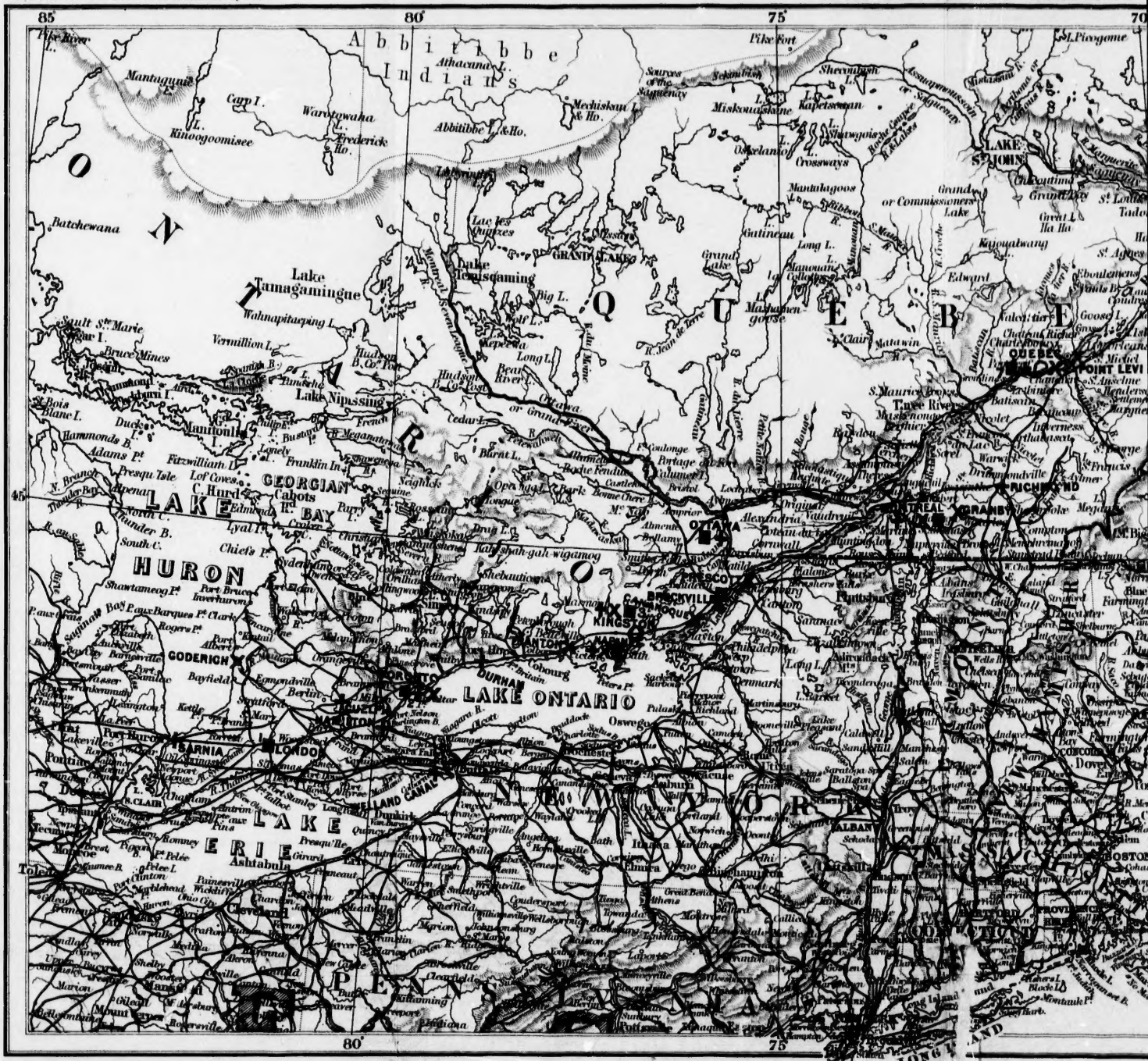
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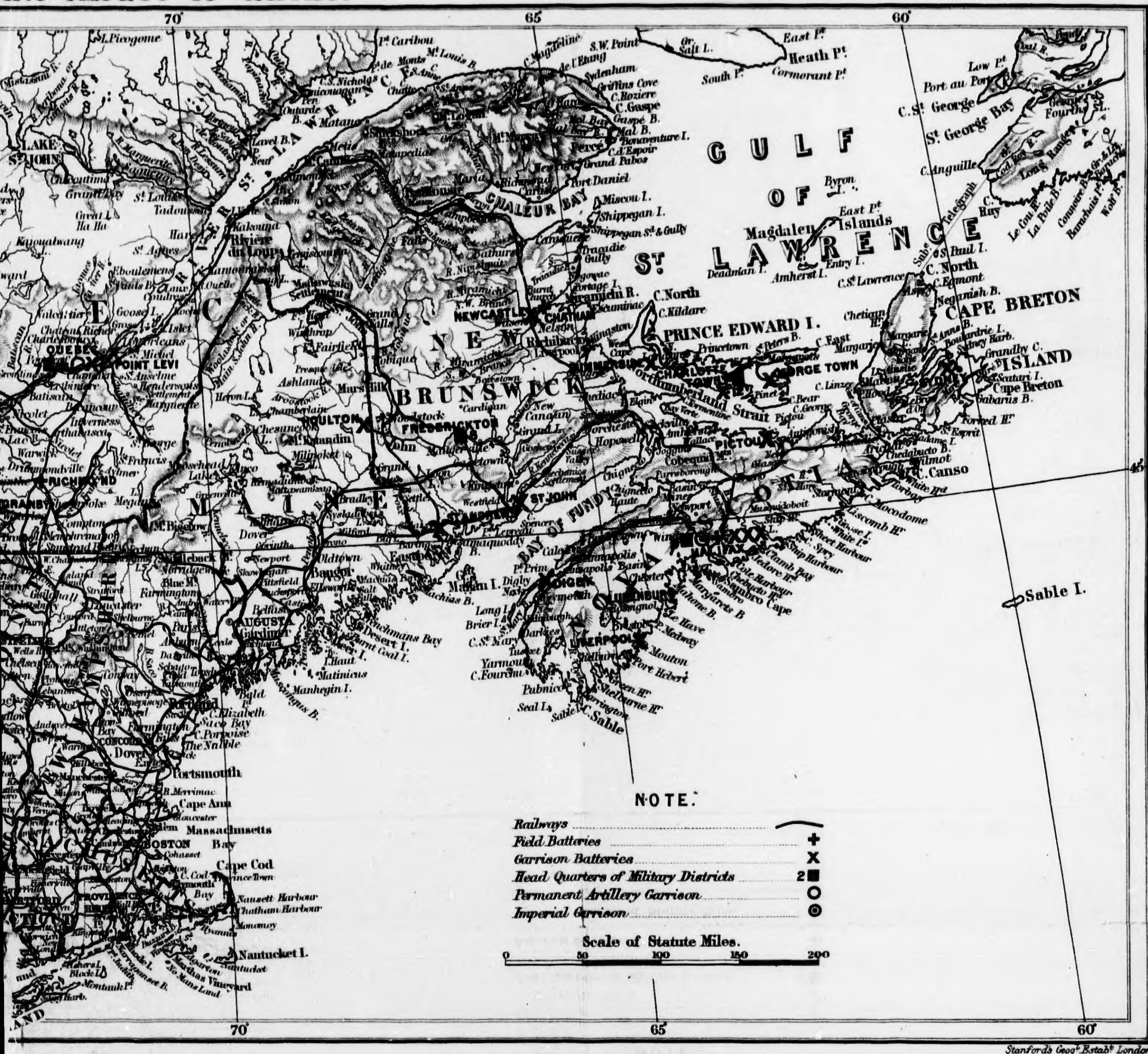
Plate.



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LECTURE.

Friday, May 2, 1879.

LIEUTENANT-GENERAL Sir DANIEL LYSONS, K.C.B., Quartermaster-General, in the Chair.

THE MILITARY ASPECT OF CANADA.

By Lieutenant-Colonel T. B. STRANGE, R.A., Dominion Inspector of Artillery.

THERE is nothing like leather was the advice of the tanner to his beleaguered compatriots; there is nothing like paper, in any form except dollar bills, would appear to be the opinion of the people of Canada, judging by their representatives. The Parliamentary Vote for military purposes has been steadily diminishing for some years past, while the military literature has been as steadily increasing from responsible as well as irresponsible sources. The defence of Canada has been amply ventilated and the best possible advice given, from the date of the first Militia Bill, originated by the gallant Officer now in the chair, the excellence of which was proved by the defeat of the Government supporting it, while its principal provisions were adopted by their successors. Sir W. Jervois and Colonel Fletcher also planned a complete system of defence.

To General Sir Patrick MacDougal, when Adjutant-General of Militia, is mainly due the localization of militia in military districts, as it still exists in Canada. The Gunnery Schools were formed under Colonel R. Ross when Adjutant-General of Militia, while the Military College under Lieutenant-Colonel Hewitt, R.E., has been developed during the command of Lieutenant-General Sir Selby Smyth, whose annual reports have been most complete and detailed, and replete with excellent suggestions, while the present Adjutant-General, Colonel Powell, a Canadian Officer of long experience, is familar with all practical details of the department. What need then that I should add to the paper bulwarks of Canada, to which I regret to say I have already contributed with but little result? I do so only by request, for the information of the members of this Institution. The subject divides itself into five heads—

1st. Strategic Geography of Canada.
2nd. Militia, Active and Reserve.

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3rd. Permanently Embodied Militia and Educational Establishments, *i.e.*, Schools of Gunnery and Royal Military College.

4th. Armament and Supply.

5th. Canadian Contingent for Imperial Service and Military Colonization.

Part I.—Strategic Geography.

Before deciding on what are the strategic points of most importance, and the measures that should be adopted for defence, it is necessary to consider what aggressive operations an enemy would probably undertake, and the natural base and lines of his operations, as well as our own facilities for concentration. I have not taken note of the wilderness between Lake Superior and the Pacific; as it can scarcely be said to contain a military objective, an army could not exist in it, and in any case we could not defend it, unless the Canadian Pacific Railway is constructed. From the North Pole we need fear no aggression, our brave Canadians would find only allies in the resistless cohorts of Field-Marshal Frost as they sweep across the desolate plains to meet the southern invader; unfortunately our flanks are not so secure, resting on Atlantic and Pacific seaboards, for though Britannia may be said in music-hall parlance to rule the waves, we cannot entirely imagine ourselves to have a monopoly of the water-ways of the world. Captain Colomb, in the able papers he has from time to time read in this Institution, has only too clearly proved to us that the police of the ocean, as carried out by the swarms of cruizers in the days of Nelson, or by the swift wooden steamers of a later date (which require numerous and secure coaling stations, more especially if coal armour is practicable), must be considered from a very different point of view when the British Fleet consists of our somewhat cumbrously floating castles of iron, the available number of which for Pacific or transatlantic service might be counted on the fingers of one hand.

Pacific Seaboard.

We must therefore consider the high seas as a base of operations common to ourselves and our possible enemies, who have moreover a secondary base on the continent, which we roughly call British North America, *i.e.*, Alaska, the slice with which the one Eagle accommodated the other, perhaps with the prospect of a future carcase in that locality. Our inadequately protected coaling station at Vancouver is much nearer such secondary bases, on the Pacific shore of Asiatic Russia, as well as the harbours of Oregon and California, to say nothing of others along the 600 or 700 miles of coast where we have no foothold that could be utilized by a *soi disant* neutral Power, when certain complications have necessitated the concentration of our fleet in eastern rather than western waters.

During a discussion in this theatre, I was asked whether it was the duty of the Canadian or Imperial Government to defend Vancouver's Island and British Columbia, my answer on this point is not of any practical value. I can only tell you what both Governments have done

towards it, and remind you that until the Canadian Pacific Railroad is built the Canadian Government would have to send from its Store Department at Ottawa or Montreal round by Cape Horn every musket, every pound of powder, and every uniform button required in British Columbia. I fail to see the advantage of the boasted belt of territory that circles the globe if the electric current of Imperial power which is absolutely necessary for Imperial defence cannot freely permeate through it. The completion of the Canadian Pacific railroad is not merely a vital necessity to the integrity of the Dominion, but of the Empire. It is as much an Imperial as a Colonial question. Its completion would be the realization of the dreams of Christopher Columbus, of Vasco di Gama, and the numerous hardy mariners who have tried to force their way to the east by frozen north or south, or sultry tropic exploration. The shortest route from Ireland to Japan by a thousand miles would be the great circle of the globe along which the Canadian Pacific runs. By it will return the costly silks and teas of China, the products of the Spice Islands, of Australia and India, the cotton of Feejee, as well as the grain of the great valley of the Saskatchewan. Without it Canada is a *cul de sac*. The struggling nationality resembles a young giant, whose careless parents allowed one nostril to be stuffed up by the loss of the unfrozen seaports of the State of Maine, and now, after giving up Oregon and the San Juan passage, that other Canadian nostril, we are threatened with the secession of British Columbia, which can neither be defended or traded with. Trade is the life-blood of Anglo-Saxon communities, and railroads the arteries. Never having had the good fortune of being permitted to visit the country, as fell to the lot of my assistant inspector, I have carefully read the exploration reports, and I do not believe in insurmountable engineering difficulties. The railroad will yet follow the Indian trail through the Tête Jaune pass, which is only 4,000 feet, half the height of the lowest pass on the United States line. Salmon make their way up to the head-water of the Frazer river; 12 feet is the limit of a salmon leap. The trail of the Indian, the run of water systems, is the natural line of railroads. Three out of four of our explorations have been athwart three ranges of mountains. The following extract from the Militia Report, page 306, will show the action taken by General Selby Smyth, which is, I am informed, to be supplemented by the further Report of an Engineer Officer from England, and a Royal Artillery Officer from Canada:—

Extract of Report on the Site, Construction, and Armament of the Coast Batteries, erected for the Defence of the Harbours of Victoria and Esquimalt, Vancouver Island, British Columbia—during the months of June, July, and August, 1878, *by Lieutenant-Colonel D. T. Irwin, Captain Royal Artillery, and Inspector of Artillery.*

The following extract from the general instructions received by me on the day of my departure from Kingston, 13th May, 1878, affords sufficient information as to the general nature of the work proposed to be undertaken, together with the limitations imposed as to its extent, viz:—

"The Dominion Government have given orders for the erection of "a battery on McAulay's Point, Victoria, Vancouver Island, for the "protection of the entrance to Victoria and Esquimalt harbours "respectively.

"Her Majesty's Government has sent orders to supply such guns "as may be required from the dockyard reserves at Esquimalt.

"I enclose a plan prepared by Lieutenant-Colonel Blair, R.A. You "will observe he proposes a small battery on Victoria Point, and "another on Fisgard Island for the better security of both harbours, "in addition to that now proposed on McAulay's Point.

"The latter is considered of the chief importance, the other two "only subsidiary.

"It is presumed the Royal Naval authorities will take steps to "arm Fisgard Island.

"You will use your discretion as to whether McAulay's Point alone "or in conjunction with Victoria Point should be armed.

"In this you will be guided by regard to economy combined with "efficiency, and the means of manning two batteries.

"A volunteer battery of artillerymen has been ordered to be raised "and equipped at Victoria. You will satisfy yourself that means are "at hand for instructing the Officers and men and rendering them "efficient, and you will assist in doing so if necessary.

(Signed) "E. SELBY SMYTH,
"*Lieutenant-General.*

"*Choice of Sites for Batteries.*

"Having placed myself in communication with Captain F. Robin- "son, Her Majesty's ship 'Opal,' the then Senior Naval Officer on "the Station, I made with him and Lieutenant-Colonel Houghton a "careful examination of the coast, with a view to determine upon the "best sites for defensive works.

"In this important duty I was afterwards assisted by a Board of "Officers, detailed for this duty by Rear-Admiral de Horsey, Com- "mander-in-Chief on the Pacific, and composed of Captain Bedford, "Her Majesty's ship 'Shah,' Captain Burrowes, R.M.A., and Gun- "nery Lieutenant Lindsay, Her Majesty's ship 'Shah.'

"It may be sufficient here to state that the plans proposed by "Lieutenant-Colonel Blair were not found to be practicable, and it was "found necessary, in order to defend with the fire of at least one gun "all the approaches to both harbours, to place ten pieces of ordnance "in position at the sites undermentioned, and arranged as follows:—

"Finlayson Point,	2	64-prs.	R.M.L.
"Victoria ,,	2	64-prs.	,,
"Macaulay ,,	3	7-in. 6½ ton	,,
"Brothers Island	1	8-in. 9	,, ,,
"and	2	64-prs.	,,

"The guns, stores, &c., were all taken from the Naval Stores at "Esquimalt, a heavy transporting axle mounted on wheels, in con-

" junction with an ordinary lumber wagon, being used for this pur-
" pose, and horses and drivers hired for the occasion."

So much for the gun power, which does not perhaps sound much in these days of modern monsters. But how about the man power? It will be seen for the reason stated to be quite inadequate, unless a small permanent force of regular trained artillerymen is established there. I again quote Lieutenant-Colonel Irwin's report.

" The guns were mounted on their carriages and platforms by the
" labourers employed on the works. I was anxious to obtain the ser-
" vices of the garrison battery for this purpose, but from reasons
" entirely beyond my control I was unable to get more than a very
" few volunteers for this duty, and then only in the evenings.

" The work of transporting the guns, stores, &c., from the Naval
" Storeyard to Brothers Island being of exceptional difficulty if
" obliged to be effected with the ordinary means at my disposal, I
" applied to the Naval Commander-in-Chief for assistance, and Rear-
" Admiral de Horsey was pleased to undertake the entire execution of
" this work, which was successfully effected by a naval detachment
" under the direction of Captain F. Robinson, Her Majesty's ship
" 'Opal.' The detachment received the ordinary rates of working
" pay, from the Dominion Government.

" With reference to the subject of manning the guns in these
" batteries, it will be observed that for this purpose the only means at
" present provided are the members of the garrison battery, enrolled
" about the time of my arrival, numbering about fifty of all ranks.

" Of this number about thirty attended the voluntary evening
" drills and lectures, held on the average twice a week during my stay
" in Victoria; about twenty men are fairly proficient in gun drill and
" artillery exercises, and a class of about ten of the Officers and pro-
" bable non-commissioned officers, who were able to attend occasionally
" at special afternoon drills, are capable of instructing at standing gun
" drill and elementary exercises.

" The battery is fortunate in being commanded by an Officer of
" great energy and zeal, and also in possessing the services as in-
" structor of Lieutenant D. G. McLaughten, who obtained a first-class
" short course certificate from this school of gunnery in January,
" 1876, he being then a sergeant in the New Brunswick Garrison
" Artillery.

" Owing to the isolated position of Victoria, the very limited
" number of its population, and the high rate of wages paid for
" labour, special and almost insuperable difficulties are placed in the way
" of the establishment of anything like an efficient volunteer artillery
" force sufficiently numerous or well trained for the purpose of manning
" this number of guns and maintaining an effective fire against ships
" in motion, a duty the successful performance of which requires the
" greatest possible amount of training and intelligence on the part of
" the gunners.

" My previous reports and recommendations (16th June, 1878) on
" this subject have indicated the advisability of maintaining a small
" permanent force at Victoria or Esquimalt, whether composed of

"Royal Marine or Canadian artillerymen, trained at the schools of "gunnery.

"This force would serve as a nucleus and training school for the "volunteers, could be profitably employed in the care of the several "batteries, guns, stores, &c., and if a sufficient number of artificers, "such as stone-masons, bricklayers, and carpenters, several of whom "are generally found in the ranks of "A" and "B" batteries, were "included in their number, the work of converting the present "earthen batteries into defences of a more permanent character could "be gradually carried on with considerable economy of expenditure."

The best means for the defence and development of British Columbia, our coal depôts, and the terminus of the Canadian Pacific Railway would I believe be military colonization of the old Roman or modern Austrian type, which I hope to discuss more fully at the end of this paper.

Let us now consider our left flank.

Atlantic Seaboard.

The second common base of operations against Canada would be the Atlantic seaboard. It is needless to specify the numerous localities round which the struggle of old wars have surged, of which time does not alter the strategic conditions. Along that indented coast (which would still serve ourselves or our neighbours, whichever had the strongest hand uppermost to begin with), vessels like the "Cimbria" could still be fitted out as privateers against our commerce and the unprotected fishing towns of the Nova Scotian, New Brunswick, Prince Edward's Island, and Newfoundland coasts. After reading Mr. Brassey's figures, which tell us that Newfoundland alone in 1872 had 10,000 men engaged in the seal fishery, while the value of the fish exported from that island alone amounted to 1,340,000*l*., one feels tempted to say if they suffer, the verdict will be, "serve them right." But we cannot allow such verdicts to go forth to the world, if there is any real Imperialism left among us. It is to be hoped the hitherto obdurate islanders, than whom Mr. Brassey says there are no subjects of the Crown more loyal or devoted, will round off our transatlantic Dominion by joining it.

Fortunately at Halifax we have retained some of the *ultimæ rationes regum et populorum*. We need not therefore discuss the defence of this fortress and harbour, which, however valuable in other senses, can in no sense be considered a safe base for operating in the inland defence of Canada, for the Treaty of 1842, which handed over the State of Maine, sends a wedge of territory up to within a few miles of the intercolonial railroad, which a handful of troopers could at any moment render unserviceable in a night, thus cutting off retreat to Halifax or succour from thence to the upper provinces. It is true that detachments were sent from Halifax during the Trent difficulty; but the United States were at that time disunited States. There are, unfortunately, other undefended points on the intercolonial railroad where the destruction of a bridge by the boat's crew of a privateer

would stop communication for some time. There formerly existed a Grand Trunk Railway brigade, and if resuscitated (in the Intercolonial) it would be an efficient means of transporting guns in extemporised railway batteries along the coast, fortifying stations, &c. Unfortunately railway *employés* have shown themselves sometimes too ready to join the disturbers of the prosperity of nations. At many points along the coast are small companies of men, more or less trained as garrison artillery, but without efficient guns or earth-work cover.

The blue crosses on the map show the localities where there are such garrison batteries, open crosses, field batteries. Among other important places, the coal mines of Pictou have been included in this partial defence, which it is hoped may grow into something tangible in time.

Under this head the Lieutenant-General Commanding, Sir Selby Smyth, remarks:—

"With regard to the defences of the Atlantic coast, it was recommended that on Partridge Island in the Bay of St. John, N.B., a "battery should be armed with four 7-inch 7-ton rifled guns, and "three 64-pounder wrought-iron guns; Negro Point, with two 7-ton "and three 64-pounders; Sydney, Cape Breton, two batteries in succession and in support of each other, on Chapel and Mines Points, "each to have two 7-ton and two 64-pounder rifled guns; and on "Edward Point, two 7-ton and two 64-pounders; Prince Edward "Island, two 7-ton and two 64-pounder rifled guns on Battery Point; "Pictou, N.S., three 7-ton and three 64-pounders on Moodie Point.

"The total cost of these armaments, with 100 rounds of ammunition "per gun, was estimated at about 50,000*l.* sterling, subject to certain "deductions, according to the defences which might be adopted for "Charlottetown and Sydney."

To prevent misconception, which might arise owing to my position as Dominion Inspector of Artillery, I must say shortly, that I never saw the report alluded to above, and from my knowledge of the circumstances of the country, and the direction in which the march of modern artillery is tending, I do not concur in its provisions any more apparently than does the Lieutenant-General Commanding, or the representatives of the people who have to pay the bill; but the subject of armament must be treated under its special head.

The strategic points on the railway system and on our Atlantic seaboard may be said to be:—

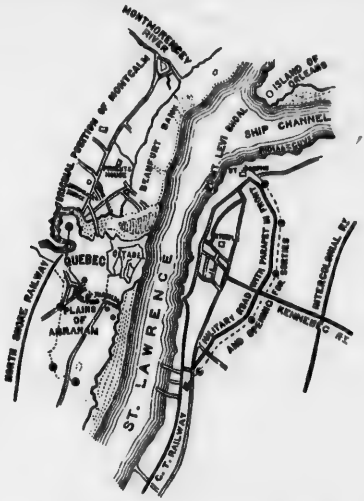
St. Andrew's at the mouth of the James, our boundary river, St. John, N.B., and Fredericton, Halifax, Sydney, Pictou, Charlotte Town, Prince Edward Island, Moncton, Chatham, and Dalhousie.

Quebec, the most important of all, the gateway of the St. Lawrence.

Quebec.

The strategic value of Quebec can scarcely be exaggerated; its fall lost a continent to France, its successful defence by ourselves in 1775 was pregnant with far mightier results to the world at large than we trouble ourselves to think of in these days when a sensational news-

paper article diverts the whole thought of the nation for the usual ten days, to be succeeded by another, and yet another crotchet, to the



apparent exclusion of the long pondered lines of policy on which Empires are built, and from the neglect of which, they crumble to decay; but there are points of vital interest which cannot be discussed by a military lecturer in an Institution like this. Suffice to say, the fall of Quebec would lose us the key of the gate of Canada, and close the only door by which British succour could come to it, or a fleet of gunboats enter its inland waters. In any case, unpleasant as the truth may appear, Quebec remains the only one possible stronghold upon which our militia, if rolled up by an overwhelming force from the west, could retreat and wait for that help which never would be denied from the old country. Meanwhile, a besieger must be kept at arm's length, which can only be done by superior artillery so disposed as to retain its power against attack, if not indefinitely, until such time as relief is at hand.

Inland continental fortresses differ materially from the maritime strongholds of Great Britain. I can recall no instance in our history, since the loss of Calais and Fort Mahon,[1] where the old flag has been

[1] Nor do I know of any fortress but Quebec from before whose walls an English fleet has recoiled without success, though not without honour, according to the traditional testimony of the gallant French Canadian, who brought to shore the tattered flag of Admiral Phipps, when asked if it was not heavy, he replied, "*Oui, mon camarade, vous avez raison; c'est chargé de gloire.*" Alas, the response of the stern old De Frontenac when summoned to surrender, "I will give you my answer from the mouth of my guns," would be scarcely possible from the antiquated armament of what was the Gibraltar of America.

lowered at the bidding of a besieger for want of succour from the sea, our great base of operations. Especially does it hold good in the case of a maritime fortress such as Quebec, where "Field-Marshal "Frost" prevents the possibility of a longer investment than five summer months; and even in summer the mighty sweep of the St. Lawrence would render complete investment almost an impossibility to the invader, who could not transport very heavy guns and their enormous weight of ammunition for a long distance over difficult country, with few and bad roads, impassable in the spring and autumn.[1]

The defender, holding the river within the circle of forts, could throw his whole force on a section of the enemy divided by the St. Lawrence and separated by it from their base of operation and line of retreat. The complete railway systems at the command of Prussia did not enable her to bring heavier guns than 60-pounders in her siege train. There are certain physical data which do not alter, viz., the strength of men and horses, the badness of country roads, Railroads, from the numerous other calls upon them in war, have been found incapable of transporting very heavy artillery. It is hardly to be supposed that the mistress of the seas and her eldest daughter, Canada, the commercial navy of which already ranks third among the commercial navies of the world, would permit the siege train destined for the attack on Quebec to be conveyed by sea. The armament, therefore, of Quebec might easily be superior to that brou[illegible] against it even by hostile ironclads, whose unarmoured decks would be exposed to the citadel fire, which, with the addition of a few torpedoes at the Traverse, would secure the St. Lawrence, if those upon whom the responsibility devolves considered the subject of sufficient importance to warrant a comparatively trifling expenditure, and to prevent, while there is yet time, the erection of buildings which would close the most important lines of fire.

Frontier.

Having considered the strategic conditions with reference to the Atlantic and Pacific seaboards, it remains to consider those of the south with reference to the natural bases and lines of an enemy's operations and the objective he would select for attack. In doing so the question is treated merely in a military and, it is hoped, philosophic spirit, such as cannot give offence to our kinsmen of the great Anglo-Saxon Republic with whom the most friendly relations exist, but they have not always been able to restrain the lawless bands of Fenians and their sympathizers who have from time to time raided

[1] 1875 was the centenary of the winter expedition of Generals Montgomery and Arnold against Quebec; the latter with incredible hardships came through the State of Maine, and, on the death of his colleague, withdrew the shattered remnants of their force. The new detached forts at Levis completely command the intersection of roads and railways east, west, and south, as well as the valley of the Chaudière and Kennebec road, by which Arnold marched, and they occupy the ground from which Wolfe shelled the town.

across our frontier; besides, time may change their motto to "*ex uno* "*plures.*"

The frontier of the Province of Quebec is contiguous to the territory of the United States for a distance of about 450 miles, that is to say, 167 miles of imaginary boundary along the 45th parallel of latitude southward of Montreal and Quebec, running from St. Regis, on the eastern end of Lake St. Francis (an expansion of the St. Lawrence) to the Connecticut river, in the township of Hereford, abutting on the State of New Hampshire. Thence in an irregular line the boundary of the State of Maine follows the high ground which forms the watershed between the Kennebec river, in the United States, and the Chaudière, a tributary of the St. Lawrence, running north-east in accordance with the disastrous arbitration of the Ashburton Treaty of 1842, which brings the territory of the State of Maine to within 25 miles of the St. Lawrence, opposite Rivière-du-Loup. Unfortunately at this point, as before stated, the Intercolonial Railway is close to the frontier, which from this point runs south-east until it meets Dominion territory in New Brunswick. The disadvantage of having a wedge of foreign territory thrust into our own is not altogether so great as might at first sight be anticipated, the character of the country being for the most part rugged, covered with forest, and thinly populated; there are no natural commercial lines, nor any railroads running through it to the north, the watershed north of the St. John's river being close to the St. Lawrence prevents the formation of any long or navigable tributaries to the St. Lawrence; there is, therefore, no natural channel for intercommunication or commerce from the northern angle of the State of Maine into Canada. As military lines of operation always follow natural channels, no invasion of Canada has ever been attempted from this point, the nearest to it being that of General Arnold, of the United States, in 1775, and he followed the line of the Kennebec and Chaudière rivers. On the other hand, in case of offensive operations from Canada, in the direction of the Penobscot valley, or to seize the triple railroad terminus of Woodstock, Richmond, and Houlton, leading to St. John's, N.B., our re-entering frontier would form an advantageous base of operations, backed by Quebec and the St. Lawrence and the Intercolonial Railway. Though the long line of frontier (4000 miles from ocean to ocean) is apparently attackable at all points, the defence of the country, even with its much smaller population than that of the contiguous States, would, with proper forethought and organization, be by no means so difficult nor impossible a task as some would have us to suppose.

Although owing to the length and character of frontier, it is quite impossible and not desirable to protect it throughout its whole length, an enemy must capture and establish himself in some vital points before he could obtain any decided military advantage. There are only a few such points. If they were put into and *maintained* in a proper state of defence, with a small body of regular troops as the nucleus of a garrison to be furnished by the local militia, such positions could be held during the five months, in which alone it is pos-

sible for an enemy to carry on operations on the large scale necessary to capture them.

Canada is a long strip of communications, its main artery, the St. Lawrence, being the fosse of a natural fortress, open during the summer season (winter operations may be deemed impracticable in this climate)[1] to the gunboats of Great Britain, and to them alone, as long as the fortress of Quebec is kept in a defensive condition. In consequence of the character of the original seignorial settlement of the Province of Quebec, there are numerous lines of roads running parallel to the St. Lawrence, forming the front and rear of the concessions or seignorial grants of land.

The Grand Trunk Railway and others on the south shore are now supplemented by railways on the north shore of the St. Lawrence and the Lakes, with their usual telegraphic lines, the whole forming a series of communications which have always enabled Canadian troops to act upon, what are practically interior lines, and so concentrate readily upon important strategic points, as was proved in the late Fenian raids.

Successful initiative in war counts for much. Both Great Britain and the United States are forbidden by treaty to build gunboats on the Lakes, but gunboats can and have with the first note of war passed up the St. Lawrence through the Lachine Canal[2] and on to the Lakes. The Beauharnois Canal on the south shore would probably be rendered useless at the commencement of hostilities by the United States; but the necessities of commerce, which are with us stronger than any consideration of Imperial defence, point to the probable enlargement of the old canal on the north shore of the Cedar rapids to Coteau landing. There is moreover the second and protected inland navigation route by the waters of the Ottawa to the capital, thence by the Rideau Canal to Lake Ontario and Kingston, which is the other gate opening to us the initiative against the comparatively defenceless emporiums of commerce on Lake Ontario; while the Welland and other canals lead to the more western waters. A counter-initiative from the Atlantic seaboard by the Erie Canal would no doubt be attempted. The Ohio Canal and river debouching at Cleveland is too long a line of counter-current navigation from which to start initiative gunboat attack.

Colonel Fletcher in his paper under this head remarks: "The "great trading city of Chicago affords means to the United States, "commanding as they do the outlet from Lake Michigan, rapidly to "extemporise at the commencement of hostilities out of their fleet of "merchantmen and steamers, vessels of war, sufficient to command "Lake Huron, and probably to force an entry into Lake Erie, where "they would be met by vessels from Buffalo and other large ports. "Thus Ontario would be threatened on its northern, western, and

[1] Though the old French Canadian *voyageur* soldiers and Indians often made during winter, inroads into English Colonies, yet the conditions attending these self-reliant expeditions of a few hardy men hidden by dense forests till they burst upon some defenceless post, are entirely unlike the conditions of modern warfare.

[2] Now being still further enlarged.

" south-western frontier, and would in great measure depend for its " defence on a land force, but this land force would run a risk of " being isolated and cut off, unless its left flank were protected, and " communication maintained with the Province of Quebec, and through " that province with the sea. Therefore, *coute qui coute*, the com- " mand of Lake Ontario must be secured and maintained. Here " Canada is at an advantage, the best harbours being situated on her " shores, and the greater number of the steamers trading on the lake " being held or manned by Canadians. These harbours, such as " Coburg, Port Hope, Toronto, Hamilton, Niagara, and Welland Canal, " would require the protection either of permanent or extemporised " fortifications."

Kingston.

Kingston should be rendered as secure as possible from capture, and contain a strong garrison capable of protecting the mouth of the Rideau Canal and supporting detachments guarding the Grand Trunk Railway at Brockville and Prescott to Montreal, thus protecting Ottawa, the capital, and the communications to the east.

It is to be hoped that we shall on the Lakes also so far take the initiative recommended by Mr. Brassey, M.P., by encouraging a volunteer naval reserve on Lake Ontario. The common trading steamers and vessels, if armed with an ordinary rifled field gun, would require no extra strengthening, and from the power and range of such guns, would be a powerful means of retaining command of this lake, as well as of the water communications between Kingston and Montreal, and the canals which avoid the several rapids of the St. Lawrence and the Rideau Canal. Troops would be concentrated at the junctions of railroads and communications from the west, such as Sarnia, Stratford, London, Guelph.

An attack from the west, however, though it might be a good political move, would be bad military strategy, as tending only to roll up the defence along the lines of communication towards the point of support and base of supply, instead of cutting it in two by an attack on the centre.

An Enemy's Central Base—Lines of Operation and Objective.

The enemy's principal base of operations would probably be at Albany, the central point from which natural lines of operation lead direct to Montreal, north-east to Quebec, and westerly to Niagara or Sackets harbour, if Kingston were a secondary objective.

Albany is moreover an arsenal to which there is access by river, road and railway from all quarters, including the Pennsylvania coal and iron country.

Springfield, a small-arm factory, and Troy also a manufacturing town, both communicating with Albany and New York, would be subsidiary bases for supplies, which could be poured along the Hudson river and Canal, Lake Champlain, and the roads and railroads all converging on the objective point, Montreal. The strongly fortified posi-

tion of Rouses Point at the head of Lake Champlain on the frontier within 40 miles of Montreal, being the final point of concentration for attack upon Montreal, the defenceless commercial and strategical capital of Canada, to which the Vermont Central and a network of other railroads converge.

Perhaps no better proof of the absolute certainty of Montreal as an objective, and no more complete idea of the inevitable lines of the United States military operation, can be gained than by a study of the twenty-five routes advertised to the Centennial Exhibition of 1876.

A glance at the map before the construction of railways shows that the mountainous regions of the Adirondacs, &c., the Catskills on the west, the White Mountains and the rugged territory of Maine on the east, restricted communications to the channels of the Hudson, Lake Champlain, and the Richelieu Valley, and will explain why history has so often, and will again repeat itself here as elsewhere. The war-path of the Iroquois and Mohawk was followed by the retaliatory expeditions of the French Canadian voyageur soldiers, and then again by British, Colonial, and United States invasions of Canada, down to the last futile effort of a Fenian mob. The tide of war has ever rolled along the channels that nature and art have made it share with commerce and travel. The lately projected Caughnawaga Canal may, it is hoped, never be constructed to admit United States gunboats up the Hudson from the sea, and so complete the communications of Lake Champlain from New York to the St. Lawrence for the enemy who, having seized the Victoria Bridge, and established batteries on the south bank of the river, could bombard the town. The wealthy commercial classes of Montreal would have to pay a very heavy contribution towards the subjugation of their country. Canada would be cut in two by the capture of Montreal, which is the head of the sea navigation of the St. Lawrence, and the focus of all communications by land and water between Upper and Lower Canada and the maritime provinces; the defence of the country would be severed; Ontario being cut off from Quebec and the maritime provinces, as well as from any aid from Great Britain. An enemy holding Montreal, with its network of communications converging upon it from his basis of supply, could easily maintain himself in the natural fortress island on which the city is built, and contain any force coming from Ontario, hold the communications to Ottawa, the capital of the country, while they proceeded to lay siege to Quebec. The St. Lawrence itself with its tributary of the Richelieu Canal and the roads and railroads following the line of country in a north-eastern direction, would become fresh lines of communication and supply, to an enemy operating against Quebec. If Quebec, Montreal, and Kingston were put in a proper state of defence, an enemy would be obliged, in aiming at the severance of communication between Ontario and Quebec, the maritime provinces and Great Britain, to carry on three extensive expeditions simultaneously, each involving the necessity of a protracted siege, and considering the short period during which military operations on a large scale can be carried on in

this country, there would be every probability of successful resistance. Unfortunately the repeal in 1872 by the Imperial and Dominion Parliament of the Act of Confederation entitled the Canada Defence Act, complicates the defence of Canada. The Act provided for the guaranteed loan of 1,000,000*l.* sterling, for the building of forts round Montreal, as well as the free gift by the Imperial Government of an armament for such forts as might be built at Montreal, also a free gift armament for the Quebec and Levis forts, all of which were declined by the Dominion Government, in favour of a transfer of the guaranteed loan of 1,000,000*l.* to the Canada Pacific Railway.

Central Strategic Points.

After Montreal, Quebec, and Kingston, perhaps the most important point is St. Johns, P. of Q., the site of the old redoubt, commands the railway bridge of the Vermont Central, the junctions from Rouses Point, Waterloo, and the Passumpsic; the Richelieu river canal, and the roads running north and south, but the advance guard of observation would be at Fort Isle-aux-Noix, close to Rouses Point and St Albans railroad junction. "To prevent the enemy from passing "vessels down the Richelieu river from Lake Champlain, for the "transport of troops, stores, and material for the attack on Montreal, "obstructions (torpedoes) should be placed in the river on either side "of, and flanked by the fort at Isle-aux-Noix. This work and its "garrison would no doubt being in an advanced and isolated position, "be liable to be captured at an early period, but it is considered that "the delay it would cause an enemy would more than compensate for "the loss that would thereby be occasioned." The garrison in retreating might destroy the Canal Lock in the Richelieu river; Sir William Jervois also considers Sorel, at the mouth of the Richelieu, an important point. Advanced bodies of militia at Lennoxville and Richmond Railway junction, after keeping the enemy in check, might retire upon Quebec, destroying the railway bridges behind them.

"It is further necessary to provide against attack upon Montreal by "a force advancing from the westward, supposing it to have crossed "the St. Lawrence, between Lake Ontario and Lake St. Louis. This "may best be effected by the construction of works covering the rail-"way bridge near Vaudreuil, at the junction of the Ottawa river with "the St. Lawrence. Such works would also act as a *tête du pont*, from "under cover of which troops might operate westward; they would, "moreover, be on the flank of any force of the enemy advancing against "Ottawa. In connection with the defensive position at Vaudreuil, "temporary works should be constructed on Isle Perrot, which, if "some of the spans of the railway bridge between it and the main "land were removed, would form a second line of defence; again, by "removing some of the spans of the bridge between Isle Perrot and "Montreal Island, a third line might be taken up at St. Annes."

Between Vaudreuil and the works immediately covering Montreal, Lake St. Louis and the Lachine Rapids, would be a sufficient defence; gunboats could be brought into the lake by the Lachine Canal, which

is being widened. Any vessels of war that were brought into Lake St. Louis would also be of assistance in the defence of the left flank of the works at Vaudreuil; and if the St. Ann's Lock and the passage near it, between St. Louis and the Lake of the Two Mountains, were made sufficiently large to take such vessels through, they could also aid in the defence of the right flank of those works. They could, moreover, operate in the channel on the north side of Montreal Island, or proceed up the Ottawa and down the Rideau Canal into Lake Ontario.

For the protection of communications by the Lachine Railway and Canal, works should be constructed at Caughnawaga, on the right bank of the St. Lawrence, nearly opposite the junction of the Lachine Canal with Lake St. Louis, and near the terminus of the railway from Platsburg. These works would also afford the means of throwing a force across the river to act upon the left flank of the enemy operating against Montreal, should circumstances be favourable for such a movement, they could also guard against the entrance to the Beauharnois Canal.

The Island of St. Helen's, upon which rifled guns should be mounted, would form a keep to an intrenched camp covering Montreal and the Victoria bridge. On this island is also the main depôt for tools, stores, guns, arms, and munitions of war for Montreal and the neighbourhood; it is unfortunately without protection since the barracks formerly occupied by a detachment from the Quebec Gunnery School were burnt. Many thousand stands of rifles, as well as a considerable amount of powder in the magazine are at the mercy of a handful of raiders, who might carry off the arms and blow up the magazine before the militia of Montreal could be assembled and transported across the river.

The cultivated classes of the United States are friendly in feeling towards Great Britain, and the Canadian population are full of loyalty, which could be at any time rendered active in the defence of the country, provided the principal expense and direction was taken by Great Britain, or the council of a federated Empire.

Offence.

Often the best defence is offence, but Canada being a colony does not contain within herself the elements necessary to the initiative in war, though her localized militia system and the character of the country, which is a riband of interior lines, land and water communications, would facilitate the concentration and launching of an offensive force which might surprise even 40,000,000 of unarmed people who have hitherto relied upon their ever successful diplomacy. Parliamentary Governments are not, however, suited to a decisive initiative; and when the expenses would have to be shared by the Imperial and Dominion Governments, divided control would be a natural result, rendering initiative perilous if not impossible. Great Britain's natural base of operations (the sea) gives the advantage of enabling her to shift her secondary bases almost at will. A combined military and

naval force, therefore, started from Canada at the first declaration of hostilities might, by giving up their communications to the rear, push on to the Atlantic coast as Sherman did, and seize an important seaport, there to co-operate with the British fleet which could support them, and form a fresh base for further operations, while an expedition from India might land a force of British troops and a Sikh contingent on the Pacific seaboard.

Part II.—Militia of Canada, Active and Reserve.

The Militia Act.

That the Militia Law of Canada is so thorough in its provisions, and that the keystone of the arch of all military systems, *i.e.*, universal liability to military service, is not absent as in those of all other Anglo-Saxon communities, is due to the traditions inherited from the old French *régime*, which were readily followed by the descendants of the "United Empire Loyalists," who found themselves for ever face to face with their more numerous and wealthy kinsmen from whom they had torn themselves, often at the sacrifice of material wealth for the sake of adherence to those principles and that "Dream of a United "Empire" which has not yet been realised, though a century has passed away. The very history of those heroic men has been forgotten, the initials of their distinctive title, U.E.L., brings no very clear picture to the minds of the majority of Englishmen to-day who, let us hope before it is yet too late, may realise the true meaning of a United Empire.

The theoretically perfect Militia Law of Canada, though it may be an example of military legislation to us at home, yet, like every other law, its practical result depends upon its administration. Instead of quoting the verbiage inseparable from legal documents, I think I cannot do better than give you the condensed *resumé* taken from the Militia Act by Captain J. C. R. Colomb, R.M.A., in his able paper on the Naval and Military Resources of the Colonies, making some explanations of its practical workings:—

Classes of Militia.

"The militia consists of all male inhabitants between the ages of "18 and 60. It is divided into four classes.

"1st Class. Men from 18 to 30 years, who are unmarried or "widowers without children.

"2nd Class. Men from 30 to 45, who are married or widowers "with children.

"3rd Class. Men from 45 to 60.

"The above is the order in which the male population is called "upon to serve.

"The Militia is divided into Active and Reserve.

"Active Militia consists of the Volunteer Militia, the Regular "Militia, and the Marine Militia. The Volunteer Militia being "composed of corps raised by voluntary enlistment; the Regular "Militia of men who have voluntarily enlisted to serve in the same, or "who have been balloted[1] to serve; the Marine Militia composed of "seamen, and persons whose usual occupation is upon any steam or "sailing craft; the Reserve Militia consists of the whole of the men "who are not serving in the Active Militia for the time being. The "period of service, in time of peace, in the Volunteer Militia is three "years, in the Regular and Marine Militia two years. Men enrolled "in the service companies of Regular or Marine Militia during any "such two years are not again liable to be taken for drill and training "until all the other men in 1st, 2nd, or 3rd Class of the same "company division" have volunteered or been balloted to serve. No "member of a Volunteer Militia corps can, in time of peace, resign "under six months' notice.

As the ballot has not been put in force since the existence of the Act, the whole of the Active Militia may be said to be Volunteer Militia, and the term Regular Militia has no special meaning, unless it be applied to the two batteries of artillery, "A" and "B," permanently embodied, one at Kingston and the other at Quebec. They had no existence when the present Act, which did not contemplate the withdrawal of the Imperial troops, was passed. It has therefore no provisions for the maintenance of regular troops, or the three years' period of enlistment now sanctioned for those corps.[2]

The Marine Militia unfortunately has no existence beyond the fact of the nautical calling of individuals being noted in the enrolment of the Reserves which takes place every five years. During Fenian raids Militia Artillery, with field guns, were placed on board lake steamers.

"*Enrolment.*

"Canada is divided into 12 military districts; these are subdivided "into Brigade and Regimental Divisions, and again into Company "Divisions.

"In each Regimental Division, one Lieutenant-Colonel and two "Majors of Reserve Militia are appointed from the residents therein,[3]

[1] Exemption on providing a substitute by payment of 30 dollars.

[2] These two batteries or gunnery schools as they are called, were first formed of Officers and men selected from the Active Militia Artillery. The Officers held no commission except in the corps from which they were taken, and the men were not enlisted except in their original corps; but on entering the schools of gunnery for one year, were re-enrolled for a further period of three years in their respective corps. The serious inconvenience of this course, from the fact of the original corps sometimes becoming non-effective before the period of service in the gunnery schools of Officers and men had expired, left such Officers and men apparently without legal status. This was subsequently remedied by granting commissions to the Officers of "A" and "B" batteries, and enlisting the gunners in those corps.

[3] It is to be regretted that these Officers of Reserve Militia for the most part have had no practical military training whatever, and have not even passed through the Active Militia. In war they would be of little use in organizing or leading the

" all Militia orders and reports are sent to and received through them. " In each Company Division one Captain, and one Lieutenant, and " one Ensign are likewise appointed to the Reserve Militia. These " are responsible by seniority to the regimental staff. Enrolment is " carried on by Officers of Company Divisions, and the list is corrected " before 28th February every fifth year; from the company returns " the regimental rolls are made up. The 'enrolment' for which the " company Officers are responsible is 'held to be an embodiment of " 'all the Militiamen enrolled, and renders them liable to serve, " 'unless exempt by law.'

" Exemptions: Judges, clergy, ministers of religion, professors in " colleges and universities, or teachers of religious orders, warden " keepers, guards of penitentiaries, officers, keepers, and guards of " public lunatic asylums, persons disabled by bodily infirmity, and " 'the only son of a widow being her only support.'

" The following, though enrolled, are exempted from active service, " except in case of war, invasion, or insurrection. Half-pay Officers " of Her Majesty's Army and Navy, sea-faring men, and sailors " actually employed in their calling, pilots and apprentice pilots during " the season of navigation, masters of public and common schools.

" Her Majesty is empowered by the Act to make such regulations " for the enrolment of such horses as may be necessary for the purpose " of field artillery and cavalry.

" The oath to be taken by all ranks of Active Militia is simply as " follows:—'I, *A. B.*, do sincerely promise and swear that I will be " faithful and bear true allegiance to Her Majesty.' It can be ad- " ministered by the Commanding Officer.

" *Balloting.*

" When the Active Militia is to be organized for drill or actual " service and enough men do not volunteer in any Company Division " to complete the quota required from that Division, the men in the " 1st class are balloted first, if the number of men required is greater " than the whole number in 1st class, then the 2nd class is required " to make up the deficiency, and so on through each class; but at no " time—says the Act—'shall more than one son belonging to the " 'same family, residing in the same house—if there be more than " 'one inscribed on the militia roll—be drawn, unless the number of " 'names so inscribed be insufficient to complete the required propor- " 'tion of service men.'"

Officers; Appointment and Relative Rank.

"Appointments of Officers to the Active Militia are provisional,

men they enrol. Their military titles would at best be only a source of confusion. It may be said in favour of the system that it is old, being a relic of the old French feudal system, but it must be remembered that its success depended on the warlike seigneurs who have been improved away. It has no doubt the advantage of facilitating enrolment, and enlisting on the side of loyalty and order some of the influential men of country districts all over the Dominion.

" pending the taking out of a certificate of fitness from one of the mili-
" tary schools of the Dominion.[1]

" According to the Act, Officers of Her Majesty's Regular Army are
" always reckoned senior to Militia Officers of the same rank whatever
" be the dates of their respective commissions."[2]

The Canadian Militia Act also provides that each of the twelve Deputy Adjutant-Generals of Districts " shall command the Militia in his district."[3]

The following paragraphs, 35 and 36 (which are difficult to reconcile with the previous mentioned), would imply that the ordinary rule of the senior Officer being entitled to command was intended to hold good as also the 185th Article of War.

" (35). The relative rank and authority of Officers in the Militia of
" Canada, shall be the same as the relative rank and authority of
" Officers in Her Majesty's Regular Army; and any body of Militia
" assembled on parade, shall be commanded by the Officer highest in
" rank then present, on duty and in uniform, or the senior of two or
" more Officers of equal rank; provided that no Officer whose rank is
" provisional only shall under any circumstances command an Officer
" of the same grade whose rank is substantive."

(36.) " Officers of Her Majesty's Regular Army shall always be
" reckoned senior to Militia Officers of the same rank, whatever be the
" dates of their respective commissions.

" The present law permits the training annually of a number not
" exceeding 45,000 all ranks. The training period for Active Militia,
" called out for training, is not to exceed 16, nor to be less than 8 days
" in any one year.

" Non-commissioned officers and privates of mounted corps, receive,
" for each day's drill of three hours, 75 cents for each horse that has
" taken part in the drill; and every Officer and man of the Regular
" and Marine Militia, and the Officers of Reserve Militia, called out
" for training, receive 50 cents for each day's drill. Payment for drill
" is made on proof of compliance with regulations touching the drill
" and efficiency of the several corps.

" The Militia, or any part of it, may be called out for 'actual ser-
" 'vice,' either within or without the Dominion,[4] whenever it appears

[1] There are no cavalry or infantry schools, the appointment of Officers of those branches are confirmed by boards of Militia Officers, though a few Officers of cavalry and infantry are occasionally allowed to fill vacancies at the artillery schools where an endeavour is made to give instruction in all arms.

[2] By a late notification in General Orders of the *Canada Gazette*, Officers of Her Majesty's Regular Army serving with Canadian Militia or Volunteers, are not allowed to avail themselves of their Army rank.

[3] But on occasions of emergency, when the troops of one military district have been ordered into another, both Adjutant-Generals have claimed the command. While in the case of the apprehended riots at Montreal at the funeral of Mr. Guibord, the line between two military districts running through the city, the head-quarters of the troops being at one side, while the cemetery was on the other, the command of the force should have been changed at a certain spot on the line of march.

[4] The Militia can be called out in aid of the civil power on a written requisition by the mayor or any two magistrates in any municipality in which a riot takes place, and the Officer in command is to obey such instructions as may be lawfully given

" advisable to do so by reason of war, invasion, or insurrection, or " danger of any of them, and when so called out, it may be placed by " Her Majesty under the orders of the Commander of Her Majesty's " Regular Forces in Canada, and will be paid at such rates of daily " pay as are paid in Her Majesty's Service.

" Officers and men, when called out for actual service, and also " during the period of annual training, or during drill or parade of " his corps, or as spectators, or while wearing uniform, are subject to " the rules and Articles of War, and Mutiny Act, the Queen's Regula- " tions and Orders for the Army, and all other laws then applicable to " Her Majesty's troops in Canada, and not inconsistent with the " Canadian Act."

" *Command in Chief.*

" By the 15th section of the British North American Act, 1867, " the Command in Chief of Land and Naval Militia was vested in " the Queen, to be exercised and administered by Her Majesty per- " sonally, or by the Governor as Her representative.

" The Minister of Militia is charged with and responsible for the " administration of Militia affairs, including all matters involving " expenditure, and of the fortifications, gunboats, ordnance, ammu- " nition, arms, armouries, stores, &c.

" The Governor may appoint a Deputy Minister and such other " Officers as may be necessary.

" The Adjutant-General of Militia for the Dominion of Canada " shall be a person educated to the military profession and who has " attained the rank of a Field Officer in Her Majesty's regular Army. " He shall have the rank of Colonel in the Militia and shall be charged, " under the orders of Her Majesty, with the military command and " discipline of the Militia." A Deputy Adjutant-General of Militia is also provided for at head-quarters as well as a Deputy Adjutant-General and staff for each of the 12 military districts.

Her Majesty may further appoint Staff Officers of the Militia with such rank as from time to time may be found requisite or necessary for the efficiency of the Militia service, but in no case to exceed that of Major-General.

The above is an outline of the legal enactments on which the Militia of Canada rests.

The Militia.

The head-quarters of military districts are marked on the map, also positions of field and garrison batteries and permanent militia garrisons.

Ontario is divided into 4 military districts.

No. 1 Military District comprises Western Ontario, with its head-quarters at London.

him by *any magistrate* in regard to such riot. A difference of opinion between the magistrates puts the Officer commanding in an awkward position.

Infantry....	11 battalions and 2 independent companies.
Cavalry.....	1 regiment of 4 troops.
Artillery....	2 field batteries. 2 garrison batteries.

No. 2 Military District, at the western end of Lake Ontario, with its head-quarters at Toronto.

Infantry	15 battalions and 1 independent company, with mountain guns.
Cavalry	Governor-General's body guard, 2 troops; 1 regiment, 7 troops.
Artillery	3 field batteries. 2 garrison batteries.
Engineers	1 company.

No. 3 Military District, east end of Lake Ontario, with head-quarters at Kingston.

Infantry	10 battalions.
Cavalry	2 regiments.
Artillery	2 field batteries. 4 garrison batteries.

No. 4 Military District, Eastern Ontario, with head-quarters at Brockville.

Infantry	6 battalions and 3 independent companies.
Cavalry	2 troops (Governor-General's Dragoon Guards, 1 troop).
Artillery	2 field batteries. 1 garrison battery.

The Province of Quebec is divided into 3 military districts.

No. 5 Military District, that portion of the western end of the province and southern frontier, mainly inhabited by English Canadians; head-quarters, Montreal.

Infantry.....	14 battalions and 3 independent companies.
Cavalry	1 regiment (3 troops), and 5 independent troops.
Artillery ..	3 field batteries. garrison, 1 brigade of 6 batteries and 1 independent battery.
Engineers	2 companies.

No. 6 Military District, head-quarters, Montreal. (French Canadian troops.)

Infantry....	7 battalions and 10 independent companies.
Cavalry	Nil.
Artillery....	Nil.

No. 7 Military District, with head-quarters at Quebec, mixed English and French Canadian troops, mainly the latter, extends to the Atlantic, along both sides of the St. Lawrence.

Infantry	14 battalions.
Cavalry	1 squadron.
Artillery	1 field battery. 3 garrison batteries.

No. 8 Military District comprises New Brunswick, with head-quarters at Frederickton.

Infantry	5 battalions and 4 independent companies.
Cavalry	1 regiment.
Artillery	2 field batteries. 1 brigade garrison artillery (9 batteries).
Engineers ...	1 company.

No. 9 Military District, Nova Scotia.

Infantry	9 battalions.
Cavalry	1 troop.
Artillery	1 field battery. 2 brigades garrison artillery (6 batteries each), and 5 independent batteries.

No. 10 Military District, Manitoba, head-quarters Winnipeg.

Infantry	2 independent companies.
Artillery	1 field battery.

No. 11 Military District, British Columbia, head-quarters Victoria, British Columbia.

Infantry	5 independent companies.
Artillery	2 garrison batteries.

No. 12 Military District, Prince Edward Island.

Infantry	3 battalions.
Artillery	4 batteries garrison artillery.
Engineers	1 company.

The battalions consist usually of 6 or 8 companies of 40 bayonets. The number of Officers has lately been reduced to 2 per company, which does not allow of drill being properly carried out with right and left guides.

The cavalry, 40 sabres per troop.

The field battery, 70 gunners, and non-commissioned officers.

The garrison battery, 40 gunners and non-commissioned officers; making a total of about—

Infantry	37,000
Cavalry...	1,800
Field artillery	1,350
Garrison artillery.....	3,000
Engineers.....	215
	43,365[1]

[1] These numbers of course do not include the Imperial garrisons at Halifax; nor are the two permanent Canadian artillery garrisons of Quebec and Kingston included in the militia strength of the districts.

Only about half these numbers have been drilled during the past two years, the Militia estimates having been reduced by about one-half. On this point, and everything connected with his command, Lieutenant-General Commanding Sir Selby Smyth, has furnished a most complete and exhaustive report, which I cannot do better than quote and recommend you to read for further information. He states:—

"When first I came to Canada, I believe the Parliamentary grant "for the Militia amounted to about a million and a half of dollars per "annum, and with that sum the 42,000 men annually trained in "brigade camps for the full period allowed by law. The following "and each succeeding year the vote was decreased, until last year it "amounted to less than one million dollars, out of which the mainte-"nance of the Royal Military College and the North-West Mounted "Police have become a charge upon it. Therefore the paid training "of the Militia has been reduced to a minimum, only one-half the "force being embodied for twelve days' drill in each year, and such "training as that amounts to is almost useless, being really little more "than an armed muster at battalion and company head-quarters.

"The Militia grant last year was exactly 931,956 dollars, from "which deduct 306,356 dollars for North-West Mounted Police, and "50,000 dollars for the Royal Military College, leaving somewhat more "than half-a-million dollars for militia purposes proper, and the "supply of all warlike stores.'

"The supply of military stores takes a considerable portion of this "grant. It comprises clothing for the whole force, which has to be fre-"quently renewed, and for the two gunnery schools, twice a year,[1] great "coats, rifles and material for their repair, ammunition, field and garri-"son guns, saddlery, gunpowder, as well as accoutrements and equip-"ments of every description that an army requires. So that in fact, after "deducting besides salaries, pay for drill instruction to Captains, "storekeepers, rent for armouries and storehouses, fuel and light, "artillery and rifle association allowances, band pay, targets, drill "sheds, rifle ranges and contingencies for general service not otherwise "provided for, there remains for the drill pay and incidental expenses "attendant on drill and training, only the meagre and insufficient sum "of 155,000 dollars, or about 30,000*l.* sterling. This sum is quite "inadequate to keep the 42,000 Militia of Canada in a proper state of "training and effectiveness, amounting approximately to the annual "cost of a single British battalion of the line. What progress can a "General Officer make in this case? He can only feel himself a source "of disappointment to the excellent and loyal body of Officers and "men under his command, who look to him for support."

General Remarks.

Given the every-day life of a people and their physical surroundings, and it is not difficult to form a true estimate of the character of

[1] One suit cloth, one serge, per annum, with an allowance to keep up winter underclothing.

its soldiers, especially when they are a national army and not the product of one or two classes or strata of society. Perhaps the leading characteristic of all Canadians is self-reliance, a splendid military quality, especially in the rank and file during war, but capable of extreme development among the Officers of all volunteer forces even in peace.

Infantry.

The general characteristics of the population of great cities are much the same everywhere. They are more intelligent, but less robust, than the rural population; they readily acquire a military carriage, precision, and smartness in drill; their uniforms are better fitted, their arms and accoutrements in better order, and their comparatively wealthy Officers are willing to assist liberally in producing these results, which, after all, go some way towards real efficiency. But in a serious struggle the backbone of Canada would, I believe, be found in the rural battalions.

A very large proportion of the farming population engages in lumbering during the winter.

He who has lived among these genial stalwart lumbermen, shared their shanty and their bivouac in winter and in early spring, when they drive the logs along the icy torrents and head waters of their wooded wilderness, cannot but be impressed with the belief that he is among nature's soldiers of the very best type.

Be they English or French Canadian, there is not, I believe, finer stuff for soldiers among any population in the world, while the habits of organization and supply of the various lumber camps at the extremity of long lines of difficult communication are a Quartermaster-General's department in miniature. Again I must quote Sir Selby Smyth for the gist of the whole matter as to the difficulty of training such men under present conditions:—

"Fortunately for the country the battalions are commanded, and "in general officered, by gentlemen of zealous patriotism and strong "military proclivities, and in the various cities they have continued to "assemble their men for unpaid drill as often as possible in the long "and unoccupied winter evenings. Therefore city battalions and "corps of all arms are in an efficient state, but country battalions "are, owing to the absence of such opportunities and facilities, less so. "However, they are fairly drilled too. They are fully armed, clothed, "and equipped. They are proficient in the use of their rifles, being "as a rule capital shots,[1] and a few weeks would suffice to place them "creditably in line with any troops.

"The training of rural battalions at company head-quarters for "three successive years has not resulted in much good. The majority "of the men reside on farms at a distance from their company head-"quarters, and when called on to drill they have to give up their day's

[1] Colonel Gzowski, by his energetic and liberal presidency of the Dominion Rifle Association, has contributed much to the shooting efficiency of the infantry of the Dominion.

"work and that of their horses, receiving only fifty cents in lieu. "Therefore they are naturally anxious to shorten the period by per- "forming two days' drill in one, and so the work is hurried over in a "perfunctory fashion; the drill instructor, who draws his forty dollars "a year as such, possibly having learnt but little of the rudiments of "drill, discipline, or regimental economy. A looseness and laxity of "system therefore occurs which does not conduce to the first prin- "ciples of training a soldier. It has been brought to my notice that "rural corps ordered out for training are frequently composed of "about one-half recruits, showing that men often join for one train- "ing only, with no desire to carry out the terms of their three years' "enlistment unless it be convenient. Officers commanding companies "are in fault for this; they are responsible for their companies under "the existing law;[1] they should not enrol men unless they know them "well, their employment, their place of residence, and whether they "are likely to fulfil the provisions of the Act. They are too lenient "with their men, and to save themselves trouble or perhaps unpopu- "larity, or even politics may here again interpose, they enrol new "hands rather than proceed by law against the old ones to compel "them, under the penalties of the Militia Act, to fulfil their terms of "enrolment. All this requires looking into and a thorough reforma- "tion. Rural corps have the disadvantage of such long distances "between their companies that the Lieutenant-Colonel, who has of "course his daily business to attend to, can hardly supervise their "details; and it may happen that the Staff Officers who make the "muster and the half-yearly inspections do not always, as a rule, take "minute notice of what has on the surface an appearance of being 'all "'correct.'

"Rural companies should be always drilled at battalion head- "quarters.

"In the same degree that rural company drill works badly that of "city corps does well, because men can assemble in long winter even- "ings in the drill-sheds without loss of pay, and they look upon their "drill and lectures as a recreation. I have every year opposed the "system of rural company drill: it has the effect of circulating some "money through the locality, and they may be convenient and satisfy "local interests; it also brings a body of men together, armed and "equipped for a time. But in my opinion it wastes more arms and "equipments and clothing than any good that can result from it, and "I shall disband every independent company not affiliated to a bat- "talion, except in Manitoba and British Columbia; and I should "suggest, if possible, in future to abstain from annual drill at com- "pany head-quarters. unless the Captain holds a first-class certificate "for drill and rifle instruction.

"This leads me to revert to the subject I have so often before dwelt "upon—the necessity for some regimental permanent staff. The "militia of Great Britain has, according to regimental strength, two

[1] The law gives a loop-hole in allowing any man to claim discharge after six months' notice. He can, and sometimes does, give notice immediately after his first training, and cannot in that case be made to attend another.

"Officers and from 30 to 36 staff sergeants, who are thorough drill "instructors; the Quartermaster being charged with the care of "arms and clothing, which are thus kept in order, and no loss from "neglect or theft permitted. In fact, it is a delusion to believe that "an efficient military force can exist in perfection without a trained "permanent staff, an unprofitable expenditure of public money being "often the consequence of dispensing with it."

Cavalry.

I venture to doubt whether Canada could supply so large or efficient a body of cavalry as has been by some imagined, who ignore the fact that Canadians are not a nation of horsemen. Toronto, Ottawa, Montreal, and Quebec are the only places where foxhounds are followed. The long, hard winter necessitates driving in a well-furred sleigh rather than riding, and in summer fast-trotting sulkies are more prevalent than hacks. Nevertheless the yeoman cavalry of Ontario and along the United States frontiers of Quebec and New Brunswick have before now done good service as outposts: the eyes, ears, feelers and veil of an army.

They have able and enthusiastic cavalry leaders in such men as Colonel Dennison, of Essay celebrity, Colonels Forsyth, Turnbull, Lovelace, Saunders, and others.

The country troops are of course rough in appearance compared to those of cities, who have more opportunities for dismounted drills, while their saddlery and appointments are kept in better order. The rural troops from their knowledge of the country are of course better scouts.

Artillery.

The artillery is perhaps the arm in which the natural military proclivities of Canadians appear at their best. Their efficiency compared with the short period of training has been a constant source of surprise to me. The practical mobility of the field artillery of small country towns is due to its popularity among the sons of yeomen farmers who enrol their own pair of horses and enlist as drivers. Their first appearance would perhaps be painful to the hypercritical glance of a Royal Artilleryman, but familiarity would teach him that, give them time, and they will get their guns almost anywhere for you; their Officers would select good positions, and the fire, judging by their target practice, would be very fairly effective. The cities naturally produce the most intelligent gunners, as the rural districts do the best drivers. The system of selecting artillery marksmen fostered by the Dominion Artillery Association, and introduced into the Canadian Militia before it existed in England, has, I think, produced very good results. I trust I may be excused for quoting my own report which gives a *resumé* of the subject:—

Extracts from Report of the Dominion Inspector of Artillery.

"*Field Artillery Generally.*

"Considering the small cost to the Government, and the consequent "short period allowed for training—16 days—I consider the Cana- "dian Militia Field Artillery in a remarkable state of efficiency. I "trust the number of horses will be increased to six per gun, with "three spare in case of accidents, making a total of 45 horses per "battery. The issue of black leather gaiters up to the knee and "strapped spurs to mounted non-commissioned officers and men, "though apparently a trifling matter, would tend much to efficiency; "the trousers, often without straps, wrinkle up towards the knees, "unsightly in appearance; they would gall the leg of a man riding "any distance. The deficient and irregular supply of whips and spurs "renders good driving impossible, and has been a source of accident as "at Hamilton, Ont., when a gun team going up a steep incline could "not be kept up to the collar, and were precipitated down a declivity, "in this instance, fortunately without loss of life.

"Instead of the importation of the cumbrous ammunition wagons, "I would recommend the adoption of a system of an enlarged limber "supply as more handy, with fewer horses and less difficulty in driving, "&c., as proposed by Major Ellis, R.A.

"The Dominion Artillery Association has, I think, by producing a "spirit of emulation, been largely conducive to the present efficiency "of the field artillery, while the system of efficiency badges for unpaid "drills has been largely conducive of good results, especially to the "artillery in cities and towns. A complete Field Battery of Instruc- "tion at each of the gunnery schools is absolutely necessary before "instruction in field movements can be given."

In spite of the very able essay of Major Holmes, Adjutant of the Kingston Gunnery School, I would not recommend a large increase to the Militia field artillery, but would prefer to see what is at present organized given double the period of drill—32 days instead of 16—and a proper equipment of ammunition wagons or limbers issued. The greatly increased range and efficiency of infantry fire does not, in my opinion, point to the advisability of increasing our proportion of guns to infantry as formerly laid down in Europe. The close character of the country and the badness of roads in Canada would not, in my opinion, justify any large increase of field artillery. Better to render thoroughly efficient what we have got. Indifferent artillery or even good artillery badly handled is only an incumbrance.

It might be thought advisable to equip a few batteries with mitrailleurs, firing the same ammunition as the infantry, to act with cavalry and enable them to seize and hold an important point; but until some manufactory for small-arm ammunition is established in Canada, it would be rash to start an armament that would call for a larger reserve of what we have to import a distance of 4,000 miles, viz., small-arm ammunition.

With regard to the garrison artillery, I must again quote my own

report and that of my Assistant-Inspector, Lieutenant-Colonel Price Lewes:—

"*Garrison Artillery Generally.*

"With the exception of the Montreal and St. John, N.B., Brigades "of Garrison Artillery, I have found the garrison artillery in a very "inefficient condition, mainly, I believe, for want of a weapon on the "efficacy of which they can rely, as they cannot on the old smooth "bores that cumber our works and drill sheds. The introduction of "Sir William Palliser's comparatively inexpensive system of convert- "ing our old cannon into rifles in Canadian workshops, at a cost of "120*l.* each, the cost of the imported Palliser gun being 160*l.* exclu- "sive of freight, is, in my opinion, the only tangible and permanent "means of giving efficiency to this important branch of the service, "especially in cities where both the industry, the guns, and the gun- "ners, are most needed; and where intelligent mechanics may be "found to form enthusiastic artillerymen to man the guns they forge "in the defence of the city where they live. Judging by what has "taken place in Great Britain, these results are not necessarily "visionary for Canada. Having commanded the Gunnery School for "Reserve Artillery at Woolwich, from its inception until I left "for Canada, it was my duty to recommend the adoption of the "Palliser 64-pounder for the Reserve Artillery of Great Britain. "The immediate interest roused by this substitution (for 'the old "'gas-pipe guns,' as the obsolete weapons were somewhat irreverently "styled by the men who were supposed to fight them) raised the "efficiency of the force in a manner incredible to one who did not "witness it. The home Reserve Artillery of Great Britain musters "60,000 fairly trained gunners in addition to the regular reserves of "the Royal Artillery. I would earnestly plead for the extension of "the system to this part of the Empire."

Lieutenant-Colonel Price Lewes reports:—

"I regret to find in the Halifax drill shed no stores for shifting "ordnance exercises; in fact no appliances wherewith to instruct or "interest the artilleryman in his work beyond a few 32-pounder "smooth-bore guns mounted on traversing platforms. The Brigades "of Halifax Artillery contain the material for as fine a force of "garrison artillery as could be desired; but if the most ordinary "appliances for instruction (which in England are possessed by the "smallest volunteer artillery corps) are not given them a high state "of efficiency cannot be expected. I trust this deficiency may be "remedied, especially as regards Halifax and St. John, N.B., at both "of which places are excellent drill sheds, and I feel confident that "the results in increased efficiency will amply justify the trifling "outlay required for the few stores referred to. These brigades have "not carried out their annual gun practice, owing to the ammunition "having only very recently been received, and I should recommend "that, as the winter season has set in, the ammunition be retained "until the spring, and then used for competitive practice."

In my own report I find the following:—

"*Engineers.*

"This branch of the Militia is sadly in want of materials, and "means of instruction. They are without entrenching tools and the "common appliances of their arm. Lieutenant-Colonel Scoble at "Toronto, Major Kennedy at Montreal, and Captain Perley at St. "John, N.B., are able and zealous Officers, anxious to produce effi- "ciency, if the means were available.

"The two engineer companies at Montreal might with advantage "be placed under the senior Officer of the arm at Montreal.

"I was not notified by any of the Deputy Adjutants-General of the "districts of the proposed dates of inspection of engineer corps, and "have therefore had no opportunity of judging accurately, but from "want of the appliances before mentioned, and from previous inspec- "tions of some of the companies, I believe them to be little more than "efficient infantry. The Toronto Engineers, Lieutenant-Colonel "Scoble, have to a certain extent, I am informed, supplied material at "their own expense."

They are very zealous and deserve great commendation and some assistance from Government, but I am not of opinion that, considering the very small sum of money voted for the Militia, it would be advisable to horse and establish so costly an institution as a pontoon train. Especially do I not think the game worth the candle in Canada, on the banks of whose forest rivers and streams for the most part are found the means of crossing, which a gang of lumber-men would very soon knock into a bridge or raft, with extra flotation if required from empty pork, flour, petroleum, or whisky barrels, which must be found where men congregate, or at all events in the stores of an army. There is no organization for the transport and supply of ammunition in the field, a question of vital importance in these days of breech-loaders.

Wednesday, May 7, 1879.

LIEUTENANT-GENERAL SIR HENRY LEFROY, K.C.M.G., C.B., R.A., &c., &c., in the Chair.

Part III.—PERMANENTLY EMBODIED TROOPS AND MILITARY EDUCATIONAL ESTABLISHMENTS OF CANADA.

When the Imperial legions were withdrawn from Quebec, the last and most important stronghold of Canada proper, to me was confided the honour of forming a garrison of loyal Canadians to guard the Imperial flag that still floated over the ancient fortress.[1] A similar task

[1] It was a curious coincidence that the two regiments first to enter Quebec after its capitulation were the last to leave it more than a century after. To an Officer and detachment of the Royal Artillery, escorted by the 60th Royal American Rifles,

devolved upon Captain G. T. French, R.A., with respect to Kingston.[1] How we have performed those duties is I believe being recognised by conferring on the Officers and soldiers we have trained during seven laborious years the honourable title of "Royal Canadian Artillery." What that labour was, can best be judged by any professional soldier picturing to himself the task of raising and training an artillery garrison and re-arming a fortress without professional assistants[2], as well as forming and conducting a theoretical and practical school of all arms, as may be seen by the curriculum of subjects taught. The scholastic monotony has been varied by the necessity for using my pupils to suppress civil disturbances, but *vires acquirit eundo*. To the assistance given by Master Gunner Donaldson, R.A., and the sergeant gunnery instructors, I am indebted, but the credit is mainly due to the good material I had to work upon, *i.e.*, the gentlemen selected as Officers, viz., Lieutenant-Colonel Montizambert and those at Quebec, whose zeal, ability, and natural soldierly qualities rendered pleasant a task at times depressing from want of encouragement in quarters where I have perhaps unreasonably looked for it. I have no doubt that Lieutenant-Colonel French, my late colleague, as well as Lieutenant-Colonel Irwin, would endorse these remarks as far as concerns Lieutenant-Colonel Cotton and the Officers of the sister Gunnery School.

The extract from General Orders in the Appendix will best explain the original and dominant idea in the formation of the schools, namely, to carry out garrison duties by means of recruits from the Militia, and at the same time to utilize this garrison as a gunnery school. It soon became evident that at least one battery of trained soldiers was necessary for garrison duties, with a Staff to instruct recruits from the Militia who should be supernumerary to the regular garrison, while of course eight horses were not supposed by any soldier to be sufficient for "instruction in riding and driving, moving field and siege guns, "and general purposes." I have no doubt the originators of the plan fondly hoped, as I did, that it would be developed; but not a single gunner or horse has been added to the strength of the establishment during the seven years of its existence.

I obtained from Government the privilege of forage for the private

was given the honour of hoisting the British flag at the conquest. On the withdrawal of the Imperial garrison from Quebec, to an Officer of the Royal Artillery, was handed over, by a detachment of the Royal Artillery and 60th Rifles, the flag, which I have no doubt my Canadian military children would honorably defend, if need be.

[1] Lieutenant-Colonel French subsequently organized the N. W. Mounted Police, and was succeeded at Kingston by Lieutenant Irwin, R.A., now Lieutenant-Colonel in the Canadian Militia.

[2] The Royal Artillery Sergeant Assistant Gunnery Instructors were not sent out until the following spring. Meanwhile the fortress had been re-armed during a Canadian winter by recruits of three months. The Washington Treaty had not been signed, but faith in its provisions seemed perfect. The guns had been dismounted to enable the Royal Engineers to repair the platforms, and the troops had been withdrawn before there was time to remount them, but my task was comparatively lightened by the fact that all the artillery stores were left to my hand in the most perfect order by Captain Murray, R.A., under the directions of Colonel Gibbon, commanding Royal Artillery in British North America.

horses of the Staff and of Officers attending the schools, and by so doing, have succeeded in horsing a couple of guns and in creating a riding establishment. If one may not point to success, it is at least permissible to tell one's mistakes. Mine was hopeful credulity in believing in the reasonable expansion of the Gunnery Schools to efficiency; and consequent rashness in undertaking the direction and command of a garrison, a Gunnery School, and what is practically a staff college for all arms, with the inadequate details laid down in the General Order. The last annual report of the Gunnery Schools may show some part of the result of seven years' labour; and the report of Colonel Hewitt, R.E., the indefatigable Commandant of the Military College at Kingston, will show the success of his struggle to carry out military instruction with a hitherto inadequate Staff.

The commercial depression of the past few years has been no doubt in a great measure the cause of delayed development of military educational establishments in Canada.

Part IV.—Armament and Supply.

Small Arms and Ammunition.

The infantry are armed with the Snider rifle, an excellent and serviceable weapon, better suited to our Canadian Militia than the Martini-Henry, of which it is to be regretted that the purchase has been commenced by Canada, as the General Commanding is of opinion "that we cannot afford to purchase the quantity in bulk, and to have "volunteers armed with two sorts of rifles and two descriptions of "cartridges on a line from the Atlantic to the Pacific, would be to "court disaster if they were called upon to take the field."

There are only 70,000 Snider rifles in Canada, which when we deduct 40,000 in the hands of the Active Militia, leaves only 30,000 for our Reserve Militia which numbers 600,000 men, a portion of whom at least would have to be called out and trained in emergency. The amount of ammunition in the country is only 150 rounds per rifle, an amount which I fear the Canadian Militia might possibly fire away in one or two general actions.

The General Commanding points out the necessity for a further provision—

"I cannot with a prudent outlook to the possibility of cartridges "being suddenly required for service, recommend the diminution of "our supply, which, on the contrary, should never be less than 300 "rounds per rifle. Cartridges have to be imported from England, as "I regret to say we have no manufactories in this country to produce "them, and as Snider cartridges will by and by not be forthcoming in "the Royal Arsenal, it may be necessary for us to bespeak them some "time before we can demand our annual supply."

Indeed the manufacture of small arm ammunition appears to me a manifest necessity, as also that for artillery. To depend on a base 4,000 miles across the Atlantic in the event of emergency would be most

hazardous; besides such a system would necessitate keeping a large stock on hand, which, with so perishable an article as ammunition, would be unadvisable, to say nothing of the constant changes in war material. The Militia of Canada without an arsenal to rely on, not only for ammunition, but for the manufacture and repair of gun-carriages, harness, camp equipage, without transport, commissariat, or ambulances, &c., would not be in an enviable position. The subject has been well treated in the Dominion Artillery Association Prize Essays for 1878, by Colonel Montizambert and Captain Prevost, of the Canadian Artillery.

The essay of the former has been printed in the proceedings of this Institution, and those wishing for details cannot do better than refer to it (Vol. XXII, No. XCIV). I shall not therefore enlarge on the subject, but simply remark that Halifax, Quebec, Kingston, and Ottawa are suitable localities for the establishment of arsenals and depots for supply. The first three are fortified, and contain suitable government buildings and lands, while the latter is far removed from the frontier. Both Toronto and Montreal, though centres of industry, are exposed, and have been captured in previous invasions by the Americans. The rate of labour is quite as cheap and probably more reliable as regards strikes than it appears to be in England, while the raw materials, iron, wood, leather, &c., are abundant, and of the best quality. Coals are not, of course, as cheap as in great English manufacturing centres, but the water power is unrivalled, and wood fuel (which is so abundant), when used as charcoal in the production of the finest ironwork, produces the most reliable kinds, free from the sulphur and phosphorus which it is so difficult to eliminate from coal-worked iron. That produced at the Londonderry Steel Company of Canada, as reported on by Messrs. Gilbert and Son, Montreal, "is said to have a tensile strength of 65,000 lbs. per square inch, "being more than 23 per cent. greater than that of the Ridsdale iron "used for gun tubes in Britain. . . . . This iron in working "also showed remarkable properties of welding." This subject of manufacture of war materials in Canada is of the greatest importance to the Empire, as rendering us self-reliant at a time when such self-reliance would be essential to the successful resistance of attack.

That most vital question, an organized system for the supply of infantry ammunition in the field, does not seem to have been considered.

Artillery Armament.

It is not necessary for me to describe the magnificent armament of the Halifax forts, nor to detail the armament of some 400 smooth-bore guns, scattered over the Dominion, but of little use in modern war, except against boat attack. I can best, perhaps, render service by pointing out the importance of converting this obsolete armament into serviceable rifled guns, in accordance with the requirements of modern war. The task is neither so difficult nor expensive as may be imagined.

In addition to the rifled guns already detailed as mounted, in Van-

couver Island, and the harbour of St. John's, New Brunswick, there are at Quebec, eight 7-inch Armstrong breech-loading rifled guns. They have hitherto been considered very weak guns, but by the use of an improved gas check, and the conversion of the gun into a side breech-loader by turning the trunnions, as has been done lately at Woolwich, the gun may be made to take a large charge of the mild pebble powder, which will increase the power of the gun while it diminishes the initial strain on the breech. There are also two of the same 7-inch B.L.R. at Kingston. It was found that in extreme frost the breech-closing apparatus was difficult to open, but by resorting to a very simple expedient, I have overcome this difficulty, and the guns might be considered fairly efficient, especially from their dominant position at Quebec, where they command the comparatively unarmoured deck of an ironclad, which in approaching end-on, would present a most favourable parallelogram to artillery fire.

In addition to the Armstrong breech-loaders are ten 32-64-pounder Palliser, and two powerful guns presented by Sir William Palliser, an 8-inch and a 7-inch, converted on his own principle. I find from an old newspaper extract, that "these guns cost Sir William 700*l.* sterling. "He had to buy them from Her Majesty's Government, and pay "Sir W. Armstrong for their conversion. The freight came to "60*l.* 10*s.* 6*d.* He has already ordered a third gun, given by the "Dominion Government for conversion at Montreal, for which Sir "William pays the cost, and a fourth 10-inch gun (which will pro- "bably cost more than the three others put together) he has ordered "to be made in England, as a gift to the Dominion Government. He "further offers to convert all her old guns without profit, commission, "or royalty, to which he has a legal right by his patent. Why this "liberality? Why this affection for old Quebec? Must we believe "*noblesse oblige?* These are patents of nobility more noble than "inherited titles, but Sir William has a claim to both. . . . . ." (It was during the period war was imminent with Russia), and the *Quebec Chronicle* goes on to remark. "The gift of Sir William Palliser "is indeed a timely one; unlike anything in this age, it reads like a "bit of old Elizabethan story, when English gentlemen from Devon, "fitted out warships 'at their own charges' to meet the great Spanish "Armada."

My first report after landing in Canada seven years ago, was to recommend the conversion of our useless old smooth-bores into rifled guns, on the Palliser principle, utilizing thereby the old carriages, sidearms, and general stores, and even the projectiles, the calibre remaining the same. Such an armament would be pre-eminently suitable to Canada, the defence of which will mainly depend on Canadian Plevnas. I have therefore continued to reiterate the suggestion in which I have been supported by the Major-General Commanding since his arrival in Canada. In dwelling upon the economy of converting old smooth-bore guns to new rifles, I do not forget the fact that we require a few powerful first-class armour-plate piercing guns at St. John, New Brunswick, Quebec, and Vancouver's Island. Except at Halifax, where there is an Imperial garrison, we have not

one such gun in the Dominion of Canada. My last report is as follows:—

"But as regards future armament, I would again solicit attention "to the advisability of adopting the Palliser system for converting "in this country the 400 old smooth-bore guns into rifles, as already "recommended by the General Officer in command, page xix of last "year's report, since which the remarkable power developed by the "chambered 7-inch Palliser gun converted in England render it a "suitable armour-plate piercing gun for coast defences, though for "land fronts and entrenched positions along our extended frontier, I "feel certain no better or cheaper plan could be adopted than the "gradual conversion of our smooth-bores into 90-pounder, 64-pounder, "and 40-pounder rifles at the trifling cost of about 120*l.* per gun, while "the old wood and iron carriages, platforms, &c., could be utilized "and new wooden carriages have been made in this country at a less "cost than that of importation.

"The relative cost of constructing wooden carriages and traversing "platforms at Quebec and importing iron or wooden ones is shown "in the following estimate:—

"*Comparative Cost of Home Manufacture and Importation of Garrison Gun Carriages.*

	Imported from England.		Home Manufacture.	
	$	cts.	$	cts.
It will be seen from the Woolwich Vocabulary of Stores that a wrought-iron double plate sliding carriage and platform will cost, with freight, &c., added, in round numbers, about	1,700	00		
The same of wood	639	00		
do. made in Quebec, as proposed	....		550	00
Wrought-iron carriage for 64-32 pounders about	375	00		
Wood carriage built in Quebec	....		170	00
do. for 64-32-pounders, imported, about	190	00		

"The manufacture of such material would not only be a saving of expenditure, but "would be a benefit to the country by employing our own artificers and expending "the money in the Dominion."

It must be borne in mind that the Dominion Parliament will much more readily vote money to be expended *in the country* than send out of it for the purchase of war material.

"I beg to recommend strongly the report of Messrs. Gilbert and Co., "Canada Engine Works, to favourable consideration; trusting that if "I can report satisfactorily on the proof of the gun now nearly com-"pleted at Montreal the Government will not hesitate to order the "gradual conversion of the 400 smooth-bore guns now comparatively "useless on our fortifications, and that a sum of money will be placed "on the estimates to meet this expenditure as well as that for seven-

" teen 7-inch Palliser rifles in lieu of seventeen 64-32-pounders pre-
" viously ordered from Woolwich by the Dominion Government.

" The differences of cost between the home manufacture and impor-
" tation speak for themselves. The efficiency of Canadian manufac-
" ture will, I believe, be established by the proof of the gun now
" being constructed, as well as inferentially from the fact of the success
" in the United States of the Palliser principle of conversion and con-
" struction. I would, however, for the future manufacture in conver-
" sion of 64-32-pounders recommend that the A-tube be prolonged
" about 2 feet 6 inches beyond the muzzle of the cast-iron gun,
" which would allow of sufficient length for the use of pebble powder,
" which being slower burning and exercising less strain on the gun,
" yet gives a higher initial velocity than the *poudre brutale* for
" which the short Woolwich guns were originally constructed. With
" the addition of the chamber I believe the 64-32-pounders could be
" made to penetrate considerably more than 5 inches of iron, as it
" has already done. The cost of this change would be inappreciable
" and the practical inconvenience of increased length *nil*, as the pre-
" ponderance already existing would allow of an increase of 4 feet
" of A-tube if required for ballistic purposes. I believe it would also
" be advisable in lieu of studs to adopt the expanding base-ring
" system so successfully experimented upon at Shoeburyness, and
" already introduced in the United States as invented by Captain
" Butler, U.S.A. It will be seen that a system of *gradual conversion*
" will enable us (at a minimum of cost and maximum of efficiency) to
" avail ourselves of the scientific experiments carried on at Shoebury-
" ness and elsewhere."

When it is remembered that science has to wait upon her handmaid, mechanical skill, the comparatively circuitous yet progressive march of modern artillery is not surprising. The earliest guns were of great length to allow of the consumption of the weak slow burning powder. They were composite breech-loaders of coiled wrought iron. When the powder was improved, the breech closing apparatus in the infancy of mechanical skill could not be made strong enough, and had to be abandoned for muzzle-loading, the cumbrous length was got rid of. Then the powder, being so improved as to acquire the title of *poudre brutale*, had to be modified as to reduce the strain of enormous charges on monster guns, which will again have to be lengthened and chambered and probably breech-loaded. The diagram perhaps indicates the direction of the next step in the march of artillery. It is not within the scope of this paper to discuss the claims of various systems, and certainly not hastily to condemn our own (which in spite of the impetuous attacks made upon it since the accidental burst of a single gun) has stood the test of time, and will no doubt be further modified to suit modern requirements. Under the circumstances, however, I must respectfully admit that I do not regret that the advice, I presume given by the Colonial Defence Committee, to purchase short Woolwich guns, has not been followed by the Dominion of Canada.

Meantime the batteries of garrison artillery organized at the important points marked on the map should be employed in constructing

batteries reveted with the iron-band gabions so easily constructed from the hooping of bales of goods. Such revetments would last half a century with but little repairs, and if armed with 64–32 Palliser converted guns to prevent close attack, and cover torpedoes would render secure the harbours of our long lake frontier, as well as other important points, which the economic application of the Moncrieff principle would render very formidable. The requirements of a country like Canada and the peculiar aptitudes of its people require that European military organizations should be modified to suit them.

The Militia garrison artillery and engineer corps should be amalgamated into a universal pioneer corps to work guns of position or garrison, as well as construct and arm the batteries they fight, which would most probably be raised in conjunction with torpedo systems. The other rough pioneer work of bridging, &c., would come most naturally to the intelligent Canadian mechanics who mostly compose the corps of garrison artillery and engineers. The latter corps are very few in number, and in isolated positions.

In conclusion, it must be borne in mind that Canada never has been and never can be dependent on British bayonets. The history of her struggles against invasion showed that she could and did, with the assistance of but few British troops, bear the brunt of it with her militia, who almost unaided rolled back the tide of war from her shores. Before the conclusion of the Treaty of Peace in 1814–15, not a single American sentry or post remained on Canadian shore, while we were in possession of Fort Mackillimacinack and other points in what is now the state of Michigan.

Part V.—Canadian Contingent for Imperial Service and Military Colonization.

"When danger of war, real or imaginary, threatens the empire, the "first thought is what a broad mark the circle of British Colonies "offers to an enemy: the second, by what a mighty circle of fort- "resses and outworks the centre of British power is defended. The "second thought is the sounder. Merely to extend territorial posses- "sions is to give so many more hostages to fortune in war. The more "the British Empire is of this character the weaker its line of defence. "But expansions of territorial dominion which have widened the "limits within which the Anglo-Saxon race can spread and multiply, "add to the vitality of the Empire. The British Empire is self- "sufficient if its resources can be brought into juxtaposition so as to "supplement each other."[1]

The offer of a Canadian contingent suggested very forcibly the capabilities England possesses for military purposes in its Colonies, and what very little use has hitherto been made of them.

[1] From a leading article in the *Times*, March 8th, 1879.

" Were it possible to imagine Germany, Austria, or Russia possessed " of Colonial dominion like ours, we may be sure the first thought to " occur to the rulers of any of these Empires would be the contingent " each dependency could be made to contribute to the army." But though England has neither the power nor the desire to enact a military contribution of men from the colonies, yet what could not be demanded was volunteered!

" The staunch and remarkable loyalty of Canada to the British Crown " has not perhaps ever been more significantly manifested than during " the early part of the past and previous year, when offers of service " in the event of war were preferred to the extent of raising in Canada " several thousand men to serve with the British Army. These offers, " some of personal service, others to raise battalions, bore the stamp of " a thorough determination to give willing and material reinforce- " ment to Her Majesty's troops. They were the spontaneous ex- " pressions of a loyal and a high spirited people to throw in their lot, " as a very important factor, in the destinies of Great Britain. These " offers were as cordially received by the Imperial Government as they " were loyally made, and should the occasion have arisen, no doubt " but that the hardy and stalwart sons of Canada would have been " found standing manfully shoulder to shoulder with their native-born " brethren of that ' old country ' which they love so well."[1]

Let us hope that in quieter times the generous offer will not be forgotten on either side.

A peace military system that does not admit of ready expansion to meet the emergency of war without dislocation is not worth the money spent on it.

Of the 12 military districts into which Canada is divided, 11 and 12 (Manitoba and British Columbia) are still comparatively unpeopled territories, and need not be considered in the present plan. It was proposed that the Canadian war contingent, 10,000 strong, should number two brigades of 5,000 strong, a brigade of three field batteries, an artillery pioneer corps, combining the duties of siege or position artillery with those of pioneers artificers, and a regiment of cavalry.

The nucleus and recruiting depôt of this force in peace time to consist of two small battalions of 500 men each, each company 100 strong named, numbered after, and recruited for and affiliated with the headquarters of each of the 10 military districts. Commanding Officers of Militia Corps forwarding to the Deputy Adjutant-General of each military district the names of Officers and men wishing to serve in the contingent, Officers of the School of Gunnery, and Military College Cadets being given a preference. The Militia Medical Officer of the district staff could examine recruits to prevent ineligible men being forwarded to battalion head-quarters. The two depôt battalions could be further divided into wings if necessary, and quartered at St. John, New Brunswick, and Quebec, with detachment on St. Helen's, Montreal, and Fort Isle-aux-Nois.

The other battalion divided between Kingston and Toronto, with a

[1] General Sir Selby Smyth's Report.

company doing duty as a guard for the Governor-General, furnishing orderlies at head-quarters, &c. There is barrack accommodation at all the above places except head-quarters, and the barracks at St. Helen's and St. John's, both burnt, would have to be rebuilt.

The artillery organization would only require the present gunnery schools at Kingston and Quebec to have the horses increased to a complete field battery for each, and an artillery artificer or engineer company added for the repair of fortifications, war material, &c.

The cavalry might be represented by a troop at Toronto, and one at Quebec, there being a riding school at both places.

The above would amply provide for garrison duties, maintaining internal order, and the instruction of the Militia, while there could be expanded into an army division for war service on their own frontiers in Europe or Asia, or such proportions of them, one, two or three battalions as might be wished for, such service battalions being paid by Great Britain when serving out of Canada. The depôt battalions always to remain and recruit in Canada, invalids and time-expired men being returned to their original companies for discharge.

I believe the above is the only feasible organization for an Imperial contingent. The offers of service made by certain Militia corps *en bloc*, though well meant, were quite incapable of fulfilment without dislocating the agriculture and commerce of the country as well as its home defence.

It is to be hoped the mistake made in raising the 100th Canadians will never again be repeated. They are probably a serviceable corps, but having no recruiting depôt in Canada they have long ceased to have anything Canadian about them beyond the maple leaf badge they have carried to serve in our Indian Empire. There seems to be a madness among a certain class for ignoring the sentiment of soldiers. Discipline and *esprit* suffer when soldiers are made to bear a badge and title to which their hearts do not respond.

There would be a difficulty about the rates of pay for an Imperial contingent. The present Canadian rates of pay of Officers are higher than those of the British Army, and how ever willing, there are not a numerous class in Canada who would be able to serve the Empire even partially at their own expense.

Military Colonization in Canada.

In considering the question of a Canadian contingent for Imperial service, it would be manifestly unjust and impolitic to allow many of the young men of a young country to be absorbed by military service in Europe, without making provision for their final return and settlement in Canada. To the young men themselves and their relatives it would be equally cruel and unjust to pay them off in London or elsewhere, at the conclusion of their service, with a few pounds in their pockets, perhaps to become waifs and strays of the great floating demoralized population of some great city. Undoubtedly emigration is one of the great questions of the day, which will not be answered by "Drift." 40,000,000 on a comparatively small island, with inadequate food supply, and failing manufactures, on the other side of a ten days'

sail, 4,000,000 scattered along a riband of 4,000 miles, *i.e.*, the population of one city, London, occupying or rather struggling with the cultivation and development of a territory as large as Europe, with an arable area equal to that of Europe without Russia.

Manufacturing magnates may for manifest reasons discourage emigration, neglect our colonies, keep home population at starvation point, until they have been met by strikes that paralyse industry, and threaten to transfer our trade to foreign countries. Then instead of the people being encouraged to emigrate, they are taught to clamour for those agrarian laws that will sooner or later shake Great Britain, as they shook Rome, to her very foundation, unless the emigration question is systematically considered and encouraged. We have been willing to struggle for black empire as long as it required cotton clothing, but as soon as it threatens to cover its nakedness without Manchester help, we say perish India! or Africa, or anywhere else that won't clothe itself with our cotton, and yet we ignore the manifest means of protecting ourselves by a commercial Zollverein with our colonies. Surely British merchants don't need to be taught by British soldiers that commerce means empire, and *vice versâ*. The German Empire was consolidated by commerce, not cannon. The treaty of the Zollverein, in 1851, paved the way for that reunion of the German Principalities consummated at Sedan, yet we seem indifferent to the commercial development of an Anglo-Saxon Empire and its commercial relations with ourselves, which are surely capable of adjustment to the mutual advantage of ourselves and our colonies. Canada has already led the way by proposing differential duties against the United States, manifestly in favour of Great Britain, whose press, misunderstanding the points at issue, has met her with expressed displeasure, instead of encouragement.

True there is room for uneasiness as to how far the trade self-protection of Australia and Canada, as opposed to protection of the general Imperial interests, may be carried, but the game is yet in our own hands. Commercial union with our colonies is surely possible, unless we decline to discuss the matter with them, and prefer the system of "drift." Let us remember that though we drifted into empire in the east, we drifted out of it in the west, when a question of tarifs in 1776 lost us the American colonies, and a hundred years later those colonies were still suffering from the internecine strife that again rose out of a question of tarifs, though the slavery question was the stalking horse selected.

India can never be the home of the Anglo-Saxon yeoman. It is a magnificent field for the cultivation of military and administrative talent among intellectually selected specimens of our upper classes. The birthright of the British yeoman, the broad lands of our colonies, were of necessity ceded with responsible government to the Colonial legislatures. The Crown lands no longer belong to the Crown of Great Britain, and this is the main impediment to any extensive system of organized military emigration. Yet as it is manifestly to the advantage of the colonies that there should be an organized system of emigration, instead of leaving them to the unhappy-go-unlucky

want of system by which stowaways and criminals, effeminate clerks, and gentlemen whose heads are sometimes as soft as their hands, may drift to their shores.

Hitherto the military emigration of British Officers and soldiers has failed because it was based on wrong principles, and that lately attempted by Canada herself in giving grants of land to the time-expired soldiers of the battalions sent for service to Fort Garry has benefited nobody but land speculators, because it was based upon broad republican principles, which do not suit soldiers or men habituated to discipline. An indiscriminate grant or land order for 160 acres was given to Officers and men alike. The grant had a name, but no local habitation; its whereabouts was not defined; to the mind of the supposed settler it might turn out a shaking swamp (muskeg), a strip of alkaline desert, or an uncleared wilderness of valueless wood. No Officer of sense or self-respect would think of settling down on an equality with Private Tommy Atkins and Mrs. T., to whose husband he had so lately administered pack-drill. Unscrupulous Officers were tempted to buy the prospective claims of their men for the price of a few bottles of old rye whisky, not to become *bonâ fide* settlers, but to hold, and subsequently to sell, to land speculators. I am speaking with a knowledge of facts.

Again, the old colonization by Imperial troops was based on the idea that every soldier, after perhaps 21 years' hard service, mainly in tropical climates, was fit, in comparatively old age, to blossom into a successful colonial farmer, no matter what his antecedents—being without capital, energy, or agricultural experience. The first or second semi-arctic winter of Canada drove him to despair and drink, to which military service in old times only too frequently predisposed a man. As for the Officers, not having been in the first instance granted estates commensurate with their rank, and having spent most of their capital or retired pay in the purchase of land, they sank to the level of the rank and file, and their sons, often without proper education, intermarried with the daughters of the ordinary working population, or in some cases of their father's servants, who eventually owned the farm on which they had been hired to work. Canada is strewn with the wrecks of the families of British Officers. Of course there are exceptions to every rule. One of the most striking is that of the descendants of the 79th Highlanders, Officers and men, disbanded after the war in 1760, settled at Murray Bay, near Quebec, 15 years afterwards. They left their farms to march against the Americans invading Canada, and returned to their ploughshares when they sheathed their victorious claymores.

The settlement of the 79th Highlanders was upon the old French feudal system. The Colonel and Officers were given seignorial grants of land and magisterial privileges, and their descendants are still to be found loyal to the Crown, and curiously enough the signorial estates have devolved upon another Officer of the 79th, nearly a century after the original settlement, by right of his wife, the daughter of the last seigneur. The seignorial privileges have been abolished.

The original settlers were not supplied with Scotch wives, and the amiable little French Canadian girls with whom they intermarried made them good Catholics and happy fathers of a numerous progeny, still retaining the typical frame and vigour of the Scot though speaking in the softer tongue of France.

Emigration to the old province of Quebec is no longer required. The French Canadians have increased so rapidly as to have already emigrated in considerable numbers to the United States. And the fertile province of Ontario has also got far beyond the need of military emigration, but it is required to open up what will be the great grain-producing valley of the Saskatchewan with its coal-fields—a fertile belt of alluvial prairie soil with an acreage about equal to that of Spain, France, and England put together. Here such pioneers would be wanted in the first instance to build the Pacific railroad, guard the depôts of supplies, &c., form settlements along the route, and give military security against Indians at a cost that could scarcely, by any possibility, reach what Canada already pays for her mounted military police, 1,000 dollars per man per annum. Far less would be the cost of the passage of military settlers and their families with a supply of three year' rations and agricultural implements, while the covered carts that conveyed them to their location on their prairie home would give shelter until quarters were constructed. British Columbia, especially along its southern frontier and in Vancouver's Island, requires such military settlements, for manifest reasons it is not necessary to discuss. The climate is more favourable to our race than that of any colony, except perhaps New Zealand and Tasmania; it resembles England without the east wind. The same physical causes that have contributed to England's greatness will, to a certain extent, create in Vancouver's Island in no very remote future a prosperous country. The equable temperature produced by the equatorial current, corresponding in the Pacific to the Atlantic Gulf Stream, brings down the isothermal lines far south of the corresponding latitudes on the eastern coast, creating a climate that gives a maximum of working days in the year as against climates of extremes. Vancouver's Island and British Columbia is as large as France and Ireland, but the arable area is contracted by the mountain ranges; there are, however, vast tracts of brush-grass suitable for herds that require no house wintering. The coal, iron, and gold, and splendid timber not far from a series of magnificent harbours, will make Vancouver a trade starting point from America for Asia—as England has been from Europe to America. If there is any truth in Buckle's "History of Civilization," that Western Britain will be great! when the Californian, receiving no fresh blood from Europe, has degenerated into the *sans souciance* of the southern European.

This is the country that asks for secession for want of railway arterial connection with Canada. It is too far for our population to reach it by the ordinary system of "drift."

The short-service system of our Army will supply a young, vigourous, and intelligent class of emigrants, who have been long enough in the Army to learn habits of order and obedience without being so

long as to acquire a dislike for hard labour, or the intemperate habits too often the result of monotonous and protracted service in a tropical climate. To lead your short-service Army reserves, and settle them where they are most wanted, on the exposed frontiers of the Empire, as the Roman legions were planted with their Officers to hold the line of the Danube, and become in long ages the Roumanian peoples, you soon will have by the Compulsory Retirement Warrant a plethora of young energetic Officers condemned prematurely to linger grumblingly on the steps of "the crutch and toothpick." You may find among them, though now "mute and inglorious," some Raleigh or Miles Standish, and (if less visionary and fanatic than Elizabethan or Puritan heroes) crowds of such self-reliant cavaliers as planted the Old Dominion that you lost through "drift." Let your young, though time-expired soldiers, go and build you up a new Dominion on the Pacific slopes. The lands which no longer belong to the Crown may be regained by the purchase of shares in the Canadian Pacific Railroad, in accordance with the original plan proposed by Sir John A. Macdonald, Premier of Canada, viz., To build the line by the sale of land of no value to Canada until settled, allotting a strip of territory along the proposed Pacific Railroad route as a portion of the shares and security of those who advanced capital to build the line. Other railway schemes, notably the Grand Trunk, have been the ruin of many, because almost all the shares were in the hands of holders living in England. See that the Canadians take a fair share of this responsibility, which they are quite ready to do, seeing they have attempted to build the road alone without help beyond an Imperial guarantee to their loan of 3,000,000*l*. Railway stock may sink, an Egyptian Khedive may repudiate, but soil along a railway in a suitable climate cannot remain valueless, and is a material guarantee against loss. To enable the Imperial Government to carry out an organized scheme of military colonization; it will be necessary for her to purchase stock (which will carry with it land) in the Canadian Pacific Railway. It is a truer, safer route to India through her own territory than that she purchased by her shares in the Suez Canal. Canada should of course start a similar system by selecting military colonists from the Officers and men of her permanently embodied Militia and contingent for Imperial service when the necessity for such arises. She will by this means not only develope her territory, give it protection, but obtain efficient military service without running into the bottomless expenditure of Army pensions.[1]

The success of any such system will depend entirely on selection pure and simple of qualified Officers, who must be let alone in their sub-selection. Any attempt at development of the "poor devil, give "him a berth, system," can't possibly succeed, when men have to contend against nature, who must be fought with her own weapons, "selection of the fittest."

The selected three years' time expired good conduct non-commis-

[1] The British capitalist will serve himself and his country better by investing in such a railway and colonization scheme, rather than by lending his money to Russia for the construction of strategic railways.

sioned officer or soldier from the British Army or Canadian regular troops, should sign an agreement to serve five years, but be liable to dismissal for misconduct or laziness, the first two in one of the Canadian depôts of regular troops. He would learn the country, and the depôt Officers would learn his character and ability. At the expiration of the first two years of probation, he would be sent on to a military farm on the Pacific railway or frontier of British Columbia, where he would be employed in constructing the railway and learning practical agriculture on the Government farms under Officers and non-commissioned officers who had learned the work by similar previous training. Should he still have conducted himself well, and shown that he would be likely to succeed on a farm, he would be given one in a series of villages. His house he would previously have assisted to build with his comrades while working as a military labourer; during his five years' period he would be receiving rations and pay; but after being started on a farm with a house and implements and rations till the first harvest was reaped, he should require no more assistance, but be still liable to frontier military or police service, and military discipline under his chiefs. It would be necessary to continue pay to Officers and non-commissioned officers supervising work and maintaining discipline for which it would be necessary to invest them with magisterial powers.

Captain J. C. R. Colomb, R.M.A.: I wish to express what I feel sure is the feeling of everybody who has listened to this paper, viz., the gratitude which is due to Colonel Strange for coming forward here and giving us such valuable information, and which would involve vast personal labour had persons to seek for it themselves. It is only those who read these papers and study these subjects who are at all aware of the depth of research required to bring forward such a paper as that to which we have just had the pleasure of listening. With regard to the first point about the Pacific seaboard, Colonel Strange remarks with reference to Alaska that it is "a slice with which one eagle accommodated the other, perhaps with a "prospect of a future carcase in that locality." It may be useful to state that there is no "perhaps" about it. In the reports of the General and the American Commission that were sent to Alaska by the American Government previous to the arrangement being carried out, the object stated in that confidential report subsequently published (I believe accidentally), that the only value of Alaska was that it, in a military sense, would be a position which would muzzle British power in the North Pacific, and that with regard to trading interests it would and must bring about the cession of British Columbia to the States. So there is no "perhaps" about it. Colonel Strange remarks: "It is hardly to be supposed that the mistress "of the seas and the eldest daughter, Canada, who already ranks third among "the commercial navies of the world, would permit the siege train destined "for the attack on Quebec to be conveyed by sea?" Well, looking to two facts I think it is not to be supposed that we even dream that such a thing may happen, but there is a great deal of difference between having an opinion and a wish and taking practical measures for carrying it out. When we talk in this way, that it is hard to suppose the mistress of the sea would not do this and would not do that, what I think behoves everybody to weigh and consider is, what preparation is she making? because whatever her wish is, her actual power to do what she wishes will depend upon the preparation she makes, and I do positively declare that we are I think in great danger of assuming too much with regard to that question. Let everybody who assumes that it would hardly be supposed the mistress of the sea would not do so and so, earnestly seek out what she is doing now, what preparation she is making, because although you may not wish it to be supposed, it may unfortunately

happen in consequence of your own negligence. Things have happened that English people never supposed would happen.

With regard to the Pacific seaboard I wish to offer one or two very brief remarks. There is another value, which is the coal value, that Colonel Strange alluded to, and I think the English people generally are suffering from great ignorance and apathy with regard to all these things which lie outside the immediate locality in which they live. With regard to this very part of the seaboard two years ago I read a paper here on our naval and military position in the North Pacific, and I gave some particulars of the coal mines at Vancouver's. There was a very interesting book published not many months ago by a well known member of Parliament, Mr. Hussey Vivian, on his trip to America, and in that book he entered largely into questions concerning Canada; but he makes a statement which is absolutely incorrect, and it is those statements that mislead people to a great extent. He says for instance, nature has only provided Canada with two coal-fields, one in Nova Scotia and the other in New Brunswick; but the best coal-field as regards quality is on the Pacific seaboard of Canada, and this fact he appeared to be ignorant of. That gives another importance to the Pacific seaboard. Colonel Strange points to the arguments that have taken place as to whether the defence of British Columbia or our seaboard on the Pacific is an Imperial question, and until we really believe in this, that everything that is vital to our Empire is an Imperial question, we shall always be in a confusion about it. Now there is a very extraordinary result produced by the difference of opinion as to what is and what is not an Imperial question. Colonel Strange has brought the question before us whether it is the Dominion of Canada or the Empire of Great Britain which should provide for the defence of that place, but if you lose that point, if you lose those coal mines, the parts of the Empire which will most directly suffer are Great Britain and Australia. If once you lose that point you release the whole Pacific seaboard of America; you cease to have the power of checking the cruizers such as were bought by Russia the other day, leaving her Pacific ports. Your fleets cannot keep the sea, and Australia is open and the road to Australia is an Imperial question, therefore the security of this point is certainly an Imperial question. We call an Imperial question anything that concerns the British people living in the United Kingdom, and as long as that view continues, so long shall we have confusion as to what is Imperial and what is not. Take the Pacific Railway—nine men out of ten in this country will tell you that is a Canadian concern—she never will be able to make it. This is all nonsense, for the Pacific Railway is an Imperial question. How few people think it is an Imperial question. We must remember the construction of that line will bring Australia, China and Japan nearer—as regards time—to us. Taking the sea as our own dominion, for it must be our dominion if we are to live, it gives us the shortest possible line through our dominion of the sea and through the British dominion in North America. Then you say that is a question of money, and we cannot agree about it, and so it drops. The trade of Australia is enormously increasing, and anybody who has read *Payne's European Colonies* will get a very interesting account there of the gradual shifting of civilization following sea basins. He traces the ancient colonies and he traces the shifting from the Mediterranean basin to the Atlantic. Now civilization and progress have already commenced to shift from the basin of the Atlantic to that of the Pacific. At this moment what has happened with regard to the Suez Canal is happening with regard to the railway across America. The effect of cutting the Suez Canal has been very much more in favour of countries having Mediterranean seaboard than it has been to us as a commercial matter, and nobody can watch what has been the effect on the commerce in the Pacific without observing that it is in like manner being diverted towards the States. The only possible way for us to get it in the future is by the Canadian Railway. The British people now have the opportunity of doing what our fathers for centuries were endeavouring to do, to find a short northern route to the other side of the world. Between 1800 and 1845 we spent more than a million upon Arctic Expeditions, all for what? to get a short route to the other side of the world. We have found it, there it is through British North America, and if completed by a railway it would cost some ten millions; so we despise what we have found and our fathers sought. We should, however, not only regard this railway from the standpoint of its

strategical value to Canada, but as vitally concerning future British power in the Pacific and as the key to British power in the future to command the sea on the other side of the world.

Colonel FLETCHER, C.M.G.: I should not have risen to say anything except to supply a slight omission which Colonel Strange's own modesty has led him to make in the paper that he had just read. He alluded to the excellence of the Canadian Artillery without saying that that excellence is in great measure due to the exceeding energy, skill, and tact that he has shown in organizing, drilling, and getting ready for service the batteries of artillery now in that Dominion. Through the exertions of Colonel Strange, Colonel French, and others, schools of gunnery have been established, which form a sort of nucleus of a permanent force. I won't call it a permanent force, but a nucleus of a place of instruction and a type on which other bodies of troops can be formed. It so often happens that the services of Officers who are away from their corps are not remembered; therefore I did not like to lose the opportunity of making allusion from what I saw myself as Military Secretary in Canada to the excellent work done by the Officers of the Royal Artillery while attached to the Dominion Forces.

Sir HENRY LEFROY: Perhaps I can bear rather more recent testimony even than my friend Colonel Fletcher, for I had the good fortune and pleasure of being the guest of Colonel Strange at Quebec less than two years ago, and of there seeing a field battery that might have appeared with credit on Woolwich Common, going through its drill, and of seeing the whole machinery of the School of Instruction carried on, with all the greater intelligence and zeal that it was entirely voluntary. In that venerable garrison, which I knew 30 years ago in its palmier days, I saw the spirit of military life kept alive entirely through the energy of Colonel Strange, and I had the pleasure of being challenged by a sentry, which I certainly never expected to occur again in the citadel of Quebec. I cannot therefore overstate the obligation which not only we ourselves as representing Imperial interests in this great question, but the Dominion of Canada owes to Colonel Strange for his efforts to keep alive by what is personally a characteristic of the man himself, a spirit of soldiership and of zeal, which would otherwise have no representation there. I am one of those who think the best security we have for the peace of Canada is the multiplication of commercial ties, the exercise of a wise diplomacy, and the removal of sources of irritation. Ruin to Canada would be ruin to multitudes in all the Northern States. Great and prosperous towns now live upon the Canadian trade, therefore designs of a hostile nature against Canada, more serious than Fenian raids, are as far remote as anything in politics can be said to be. But there is another point of view. No doubt the development of the martial instinct of any race is essential to its self-respect. If there is one obligation more than another which we owe to Lord Palmerston it is that by his timely expenditure of eight millions of money he increased the self-respect, the freedom from panic fears and periodical fits of alarm and uneasiness that used to seize the public mind before we had the great defences which he developed. Lord Palmerston's care did not stop with Great Britain. Although the expenditure was comparatively restricted to home ports, a good deal was in fact expended abroad, and what is more, great designs were matured and prepared, and only need the purse strings to be opened to place Canada in the same position of security. The natural features of Canada are, of course, of an indelible character. There is the Lower St. Lawrence, which is the key to the whole position. There is the difficulty of defence of Western Canada, the certainty that we must concentrate our troops at three or four great points, and trust to the winter wearing out and exhausting the forces of any invader. There are martial instincts in the race developed by their particular phase of civilisation, the habits of daily life, which will make them one of the toughest people to conquer on the face of the earth, so that their conquest or annexation without their own consent seems to me a moral impossibility. Looking at it from that point of view I am delighted to hear my friend Colonel Strange bringing his great personal knowledge to bear upon the question to re-excite public interest in it, but I look upon it rather as a philosophical exercise than as a thing of great practical urgency. With regard to the North Pacific there is one of those questions in which a single generation of man has seen a most prodigious change. The last speaker might have included a coal-field between the Pacific

and Upper Canada, namely, the coalfield of the Saskatchewan and Peace Rivers. I have visited that country, and can testify to the existence of coal there in large quantities. Nature has herself apparently pioneered the way for us by placing exactly where we shall some day want it, the stores of coal necessary for our purpose, and the iron will not be far off. But whether the Canadian Government should go into the vast expenditure which they are urged to do by the Columbians in completing the railway instead of letting time itself develop it, making it length by length, as is the plan of their able and sagacious engineer, is a point we might discuss for a great length of time without coming to any agreement. I have known Canada for 35 years, and the advance in that space of time is beyond anything to be easily imagined; not only its material advance, but also its advance towards those feelings on which national independence may be founded. They have no desire to be independent of us, and I trust that this generation will never see them so, but we must, of course, hold them with a silken string; and never was there a moment in which the loyal and popular feelings of Canada were stronger in favour of the Imperial connection than they are now.

General LOWRY: As one who knew Canada well some years ago I would like to say how entirely I go with Captain Colomb in the remarks he has just made, and how grateful I think we should all be to him and to Mr. Brassey for previous addresses here on this subject, and to the able lecturer of to-day—Colonel Strange—for calling public attention so forcibly to this matter.

Attaching myself the vastest importance to use being made of the present time to prepare, in every possible way by land, sea, and lake, our Colonies for any emergency, I do hope that this subject will not be allowed to be lost sight of.

There can be none of much greater moment than that of a well-planned scheme of mutual defence and protection between Great Britain and her dependencies. Such a scheme would seem to promise to be best matured by due consultation—say by means of a Royal Commission—between the Imperial and colonial authorities. It will not do to attempt to improvise it when the emergency is on us. However it may be with us in "the old country" our colonies are growing apace. If we look at the short span of time it took to make the United States the great nation it now is, it will not be by any means impossible to forecast what Australia, New Zealand, South Africa, and British America may—may must—become even in the time of our children's children! Why that part only of Canada known as Rupert's Land is said to have increased by 20,000 inhabitants in course of the last year! And now, while the hearts of the people of that great dependency of British North America turn to us, as we have heard this afternoon, and as, I doubt not, do those of the people of all our colonies, with such loyal devotion, now is surely the time to lay deep and wide our plans for standing together as one great Empire for all time.

Colonel MONCRIEFF, F.R.S.: Permit me to remark upon one point brought forward by Colonel Strange, the construction of the great line connecting, what he happily named, the two nostrils of British America, viz., Columbia and Lower Canada. I have myself been in that central region through which this line would pass, and do not know any available country which, on the whole, is better suited for settlement by Englishmen. The vast and fertile undulating plains of the valley of the Saskatchewan, so accessible by a railway, and really so near to England, are, as it were, cleared by nature for settlement, and ready for the plough. A condition of things exist there which home statesmen do not realise, or else ignore, although they might have an important bearing on the crowded population of these islands. Certain classes of politicians—I do not say statesmen—in this country seem never tired of disparaging such questions, which they stigmatise as Imperialism, and constantly endeavour to concentrate public attention on home affairs, or on what Colonel Strange called the Home Empire, to the exclusion of the external or Colonial Empire, concealing the fact that the prosperity of the Home Empire depends, to a great extent, in these days upon the Colonial Empire, and is likely to depend even more in future on that, and upon the security of our great lines of communication.

That great territory, lying between the Atlantic and Pacific, offers not only a line of communication, but the very thing which is getting ever scarcer as our

population increases at home, viz., land for the poor, and opportunities for a healthy agricultural population. Such opportunities, necessary for the moral and physical health, if not for political stability, are getting smaller in proportion as our population every year increases, whereas our available land here remains the same. In the healthy region through which this line runs there is ample accommodation for the surplus population of the United Kingdom for a very long time, where they could settle and prosper without changing their flag, to the mutual advantage of the colony and mother-country. I believe also that the construction of that Pacific Railroad has a strategical importance extending far beyond Canada itself, and which cannot easily be exaggerated. It quite startled me to hear the lecturer refer to a possible act of separation on the part of the Columbians. If such a thing were to take place, either by their own action or by external force, those coal-fields which Sir Henry Lefroy referred to as being of possible future use to this country, would be used against this country; certainly against those interests which the public are led to suppose will be conserved by confining our action within our own seas. I trust this paper will find its way to the ears of the public, and help to enlighten them as to who their best advisers are, viz., those who confine their views to what is convenient and immediate, or those who also embrace the whole Empire, and provide for the future.

Captain P. H. COLOMB: I did not intend to speak on this paper, which is really a military paper, but some remarks which fell from my gallant friend, Sir Henry Lefroy, in reference to what my brother said, make it necessary that some speaker should draw attention clearly to the difference that might appear to exist between them in reference to the Pacific Railway. Sir Henry Lefroy spoke strongly, and I think we all went with him, as to the desirability of insuring peace by the multiplication of commercial ties. As I understood my brother's remarks, he wished to point out that from the transference of commerce, first to the Mediterranean, then to the Atlantic, then to the Pacific, the fact was that the commerce of Australia was drawing more nearly into and through the United States. Of course a cosmopolitan would say at once that that was of minor importance, because the great thing was the general progress of the world. I myself am not quite a cosmopolitan, and so if it be the case that the commerce of the East and of Australia is drawing more and more to the United States, then I say I think those under English dominion are very nearly concerned in drawing the commerce through their own territory. However satisfactory it may be for the general welfare of the world, I think that we Englishmen have a distinct interest in drawing commerce by means of the Pacific Railway through our own territory to our own shores, because I take it that if the commercial routes get entirely fixed *vid* the United States, the result will ultimately be that there will be no use for that railway at all, and that any strategical value it might have, would be lost, because it would be impossible to make the railway only on that account.

Sir HENRY LEFROY: I may state that when I was at London about a year ago, there was a train for San Francisco actually at the station when I arrived there, so that the commerce of the Pacific does flow through Canada.

Captain J. C. R. COLOMB: I spoke of the trade and commerce of the Pacific in regard to Australia, China, and Japan, and that is being every year drawn more and more, not round the Horn, not through the Suez Canal, but towards the United States.

Admiral Sir COOPER KEY: I should like to ask Colonel Strange one or two questions. I think he stated that the Marine Militia in Canada did not exist, although provision for it was included in the Act of Parliament for the formation of the Militia in Canada. Will he kindly tell us if he knows the reasons why it is not in existence—whether it is because of the expense, or because of the indisposition of the people to enter into the marine service: or whether it is because the Canadian Government do not consider it of any importance for the defence of the country? Then I would ask, is there any elementary torpedo school, or any idea of forming such a school in Canada? Is there any preparation for torpedo defence of the St. Lawrence? And, further, what number of rifles are there in store in Canada, and of what description, Martini-Henry or Snider? I am very glad to have an opportunity of confirming what I have heard from Colonel Fletcher and Sir Henry

Lefroy as to the admirable organization of the artillery in Canada under Colonel Strange. I had two opportunities of witnessing its practice and inspecting the system adopted, and I can speak most strongly of the delight I felt on seeing the perfection to which it had been brought under his care.

Colonel STRANGE: I cannot speak decidedly as to the causes of the non-existence of the Marine Militia. I should think it was certainly not due to indifference or apathy on the part of the marine population, either of the seaboard or of the great lakes, because, as probably the Admiral knows better than I do, the Nova Scotian fishermen have always had a great reputation for hardihood and daring, and I believe the lake sailors are not far behind them. The true cause I take to be a question of money. As regards the torpedoes, there is no organization whatever. On one occasion, when it was suggested to me (not to set the St. Lawrence on fire), but to clear it from ice, I obtained from the Corporation of Quebec five charges of gun-cotton, weighing 50 lbs. each. I placed these charges under the ice and exploded them by electricity, carrying it out as a means of instruction to the Artillery Officers and the men under my command. I also applied to the Government to allow me to send Officers to Halifax to be instructed by the Royal Engineer in torpedo practice, but the question of expense again came in. I also, though I am by no means as well acquainted with the coast as the Admiral himself, did suggest in confidential reports to the Dominion Government the localities that I thought would be advisable for torpedoes, the means of preventing their being dredged up by covering them with a few light guns in position, and other details, but I have heard nothing further on the subject. As regards the rifles in Canada, this point will be referred to in the next lecture. There are only 70,000 rifles in Canada, 40,000 of which are in the hands of the Militia, and about 30,000 are in store. They are of the Snider pattern, and I must say, considering the close character of the country, that the Snider rifle, which is a rough serviceable weapon, answers very well in the hands of the Militia. I should not like to see the Government of Canada investing in Henry-Martini's, but I am sorry to say they have already commenced to do so. They have now obtained a few Martinis, and have in consequence a mixed arm and a mixed ammunition, with all its disadvantages, but I was not consulted on that point, nor the General commanding, apparently, as he condemns the purchase in this year's report.

Commander GURDON, R.N.: I should like to ask Colonel Strange one question. Are the guns which he has informed us are mounted at the various batteries in the Dominion intended to be the permanent establishment of guns for those places? The Americans are the only serious foes we are likely to encounter in those parts. If we were to go to war with them we should have some very heavily armoured monitors brought against us, and *not one* of the guns that Colonel Strange has mentioned is capable of piercing those monitors.

Colonel STRANGE: In answer to Commander Gurdon, I must say I devoutly hope that the limit of the seaboard armament has not been reached. The guns at present in position are put there on the principle that half a loaf is better than no bread.

The CHAIRMAN: This subject has been so fully brought forward by Colonel Strange, and so completely discussed by the gentlemen who have taken part in the argument, that I have nothing to add. I can, however, fully corroborate all that Colonel Strange has said with regard to the quality of the material of the forces that are in Canada. I have never met with a finer set of fellows anywhere than the Canadians, especially the lumberers. I have met them in the bush; I know them well. They are magnificent men, capable of being brought into organization in a very short space of time. The great difficulty, of course, in Canada is the small number of these magnificent men, for the whole population is now below three millions, as against the enormous population of the United States. I beg on your behalf to return thanks to Colonel Strange for his admirable lecture.

Second Day's Discussion.

Sir Cooper Key: I should like to ask Colonel Strange if he has heard any confirmation of what I was very glad to read in the paper two days ago, that the desire for secession from the Dominion on the part of British Columbia has now entirely ceased, and that a promise has been made by the Canadian Government that the construction of the Pacific Railroad shall be taken in hand as soon as the scheme can be organized. I am strongly impressed with the necessity for the construction of this railway as a matter of Imperial policy for the defence of our colonies in general as well as for the commercial interests of our own country, and especially for the security and prosperity of Canada. It seems to me the duty of all Englishmen to advocate that measure as strongly as possible. How it is to be carried out is beyond our province to indicate. The Home Government cannot interfere with the internal administration of Canada, but I believe it is the duty of every Englishman to assist in promoting the construction of this line. As was remarked by Captain Colomb the other day, large sums of money and many valuable lives have been expended in attempting to discover a practicable north-west passage without success, though not without valuable result, while the same object would be obtained far more securely by the Great Pacific Railroad. I trust that we shall soon hear that this great work has been undertaken.

Colonel Alcock: Imperial duty is the principal point now as it was in the previous discussion when we heard the question asked: "What are Imperial duties "towards the Colonies?" and no one gave an answer, and that for a very sufficient reason, which is, that it implies a policy towards the colonies, and a policy requires the support of public opinion, and public opinion in this country is very gradually formed, excepting after an event and under the influence of some great and sensational occurrence; but the object of this lecture has been to anticipate dangers and difficulties, to forecast what may be likely to occur and what may require to be done. Our present colonial system began, as I believe, in 1837, when Lord Durham was sent out to Canada with very great powers to settle existing difficulties, and to that nobleman we are indebted for a system of constitutional colonies and their federation for defence, which is the subject of this lecture and discussion. The next great step taken was that in which the public denounced the idea that the colonies were an incumbrance and ought to be thrown over, in order that a greater home power might be kept for the purpose of influencing Continental affairs called foreign policy, if that did not mean international peace. The idea was as unsound as anything could be, and it could be shown to be so upon a military principle, because we act upon defensive and not upon aggressive ideas. We know that on the Continent the Great Powers can put we may say 500,000 men under arms, with double that number of trained men as a reserve, and an equal number again ready to be called up by compulsory service, and there is the root of the whole question; it is the difference between the compulsory service and voluntary service. Everything with us must be voluntary, carrying it on to the colonies themselves, and what they do, must be voluntary. Every colony, which from its voluntary power provides for its own defence, contributes its full quota towards the general Imperial safety inasmuch as it has done its part. With respect to all continental colonies the first consideration is whether they will fulfil their full duty of defending themselves, and Canada, which the gallant lecturer has brought so forcibly before us, has set a very strong example in that respect, and I think we ought all to be very much indebted to him for the able manner in which he has brought before us the facilities with which a railway may be built, and the facilities by which a military colonization can be effected, inasmuch as the two could be easily made to work together, and the system which men understand in a regiment should be used in the construction of a railway.

Captain J. C. R. Colomb, R.M.A.: I quite agree with the observation of the last speaker, that if a colony has provided for its own defence it has done its duty, but the difficulty is to determine what is its own defence. If you take some of your own colonies that are now engaged in doing that very thing, and spending a considerable deal of money in their own quarter of our globe, you would find that they are doing

nothing with regard to something vital to their own interest, and that is nothing for the protection of their enormous wealth passing over the sea. The real difficulty in the matter of this Pacific Railway seems to be one of money. I do not think it is a question of political feeling between the mother country and Canada at all. Canada recognises the necessity for this railway as vital to her future, but she has not got the money to make it. On the other hand, we in this country say it is a Canadian concern, when it is no such thing; it is a concern which is vital to our whole Empire, for by it we should obtain the shortest route for the whole of the Chinese, Japanese, and Australian trades. A question has been asked about the secession of Columbia, but behind that there is another question which really affects us with regard to Vancouver's Island, that is, the question of an Imperial dock. I dare say distinguished naval Officers here, do not know that British Columbia has already expended equivalent to 40,000*l.* in labour and plant in commencing the building of an Imperial dock. It is well that these things should be known, but those reports are not laid before Parliament, and the consequence is she has been placed in the position of commencing a dock which she cannot finish. She joined the Dominion on the condition of the Pacific Railway being made; the railway has not been made, and she has been left with this unfinished dock, involving expenditure of capital, on her hands, which unfinished dock she has offered to the Imperial Government. She has expended the money, and she says, "for goodness' sake take it off our hands, and complete it as an Imperial dock," and Admiral after Admiral in the Pacific has urged and pressed our Government about the importance to us of that position, and the necessity of having, 15,000 miles away from home, a place where we can dock a ship; but people in this country do not know it. The fact is we are afraid to look into the whole question, and the reason why we may lose this whole province, the reason we are afraid to make such preparation to maintain our command of the sea in the North Pacific, is because we have not direct communication with it. Therefore the Pacific Railway becomes connected with the dock, the Vancouver Dock is, like the Vancouver coal, connected with our command of the sea in the North Pacific; the command of the South Pacific goes with it, and our Empire of half the world is at stake. Now we at home are much more interested in our own affairs than in the affairs of those who come after us, and therefore there is a view of this Pacific Railway I should like to bring forward. Colonel Strange has already dwelt upon it, but it is important in connection with the Pacific Railway and with colonization. What the colonies want is population, and what we have too much of in England is population. At the present time your food supply is in the hands of foreign Powers; but supposing this railway to be made, you would then have within 14 or 15 days of England this enormous British tract of the best food-producing land in the world, and which when got at, would I believe maintain its food-producing power against the whole world. There is plenty of evidence to that effect. You have got that British waste land close to you. You do not choose to make that railway to develop it, and to enable home population to get at it, you choose rather to say it is a Canadian concern. What is the consequence? As I said the other day, out of some 54,000,000 quarters of wheat imported into the United Kingdom in 1877 we got about 22,000,000 from America. A month ago you may have noticed in the papers it was discovered that a ring existed in America for buying up and controlling the export of the corn crop of the year, and if it had not been accidentally found out you would in this country have suffered from that by arbitrary rise in the price of your food. As long as English people are content to let their food come from a foreign country when they have got food-producing wealth of their own thrown before them by nature, which they have only to pick up and make use of, they must remember this, that the control of their food will have passed out of their hands through their own blindness and neglect. Such a "ring" would be impossible in Canada if our food was produced there, because commercial transactions are guarded and protected by British law. It was stated in the discussion here the other day that we were to hold Canada and our colonies with a "silken string." I know it is a very popular phrase, but in using it we must remember that there are two ends to the string. It is not altogether a question for you, it is a question for the colonies at the other end as well; and when people talk of cutting colonies adrift they must remember also that if the present action of the

United Kingdom be not worthy of its position as the head of the Empire, before much time passed, the colonies might in disgust talk of cutting it adrift. Therefore in talking about consolidation we must also talk about reciprocity of duties and obligations. If we desire to keep the colonies it must not be by a loose string, but by a firm hold at both ends, and by a mutual system of give and take. With regard to the "silken string" I think Officers of the Army and Navy should closely examine as to whether we are not getting a good deal of shoddy into that string; in fact it may not be silk at all. We have heard of these Canadian Schools of Gunnery, &c., those admirable institutions for which Canada and the Empire has been indebted to the energy of our lecturer and his colleagues. Many of you have read the admirable Prize Essays by Officers reared in those Dominion schools, and you must see there is coming on in Canada, a school of highly-trained scientific Officers, and you say, "That is a very good thing; let them go on." I hope they will go on, and I am sure they will as long as they have Officers like our gallant friend. But you must remember at present your superior appointments in Canada are held by Imperial Officers sent from England. When you get a number of excellently-educated, admirably-trained military Officers of Canadian Militia as you have now growing up in Dominion schools at this moment, do you think that they will be content always to occupy subordinate positions in Canada? They will not; it is unnatural that they should. Therefore I say you have to look to that fact, and to treat them as Englishmen, and as much a part of England's military strength as if they were born in Middlesex. We know it is the ambition of Englishmen to rise to the highest ranks of their profession, but at present the highest military positions even in their own localities seem to be out of reach of the colonists. The Home Militia offers a road into the Army; but you shut the gate on Canadians by saying the Canadian Militia shall not be a stepping stone for them into the Army of the Queen, and thus you bar them out. If the question of Imperial defence is ever to be settled on a durable basis it must be on broader principles than "silken string" theories," and the question must be dealt with honestly, thoroughly, and truly.

Commander GURDON, R.N.: I should like to ask Colonel Strange whether any proposal has been brought forward in the Dominion House of Parliament for the supply of money to erect a small arms factory in Canada—whether if it has been proposed, it was rejected or not, and if rejected, by how large a majority? I had the pleasure of being here two years ago, when Captain Colomb read a very able paper alluding to Vancouver's Island and the Dominion. I then suggested that a garrison should be sent out from England, and I hoped that it might have been done. This garrison, for more reasons than one, should be composed of marines and marine artillery, so that they may be at the disposal of the Admiral in command of the station. I think Vancouver's Island in the opinion of most people who know that part of the world, should be an Imperial colony, or at all events an Imperial garrison, the same as we have at Halifax on the other side. There are no docks of any description that we can go to, unless we go to the Americans at San Francisco. We have an enormous trade with the Pacific coast. I have seen 70,000 tons of British shipping lying in San Francisco at one time, waiting for wheat. Of course if war breaks out with America—we must allude to these questions in connection with that part of the world—that trade of course would go, but we should have to protect the whole of our shipping in the Pacific, and a great portion of our China trade on that side, and we have not a single dock that we could put our men-of-war into at all. It is absolutely necessary that we should get a supply of coal on the spot; that supply of coal can only be got at one place, Vancouver's stand. Therefore it is absolutely necessary that for military purposes these coal supplies should be properly defended. They cannot be defended without a garrison. Ships can do a great deal, but you must have a garrison to protect your batteries, and those batteries must be placed to protect your arsenals and coal supplies in time of war. There is no doubt that the construction of the Canadian Pacific Railway at any cost is an *absolute necessity* if we are going to maintain the Dominion of Canada. That view has been pressed on the Government again and again. There is no doubt that the Americans place every possible obstacle in our way to prevent the completion of the Canadian Pacific Railway, for this very

good reason, that they know if it is not carried out soon, British Columbia must fall into their mouth like a ripe cherry.

It is no good shutting our eyes to a stern fact that the manufacture of cotton goods has ceased to be a profitable employment in this country. That means that an adult population of four millions in Lancashire and elsewhere will shortly lose their means of livelihood and have to be provided for otherwise; and all this time we have immense tracts of land in the Dominion and other colonies to which they might be drawn, the connection between the colonies and the mother country strengthened, and riots and perhaps far worse consequences avoided. This scheme could be easily carried out if the Government chose to make emigration a national measure, directed by themselves. They could raise a large loan at 3½ per cent., paying the passages out of married couples, their maintenance for the first year, and the erection of the necessary buildings, the Colonial Governments on their side granting farms of say 200 acres to each married couple, the money expended by the Home Government being charged as a mortgage of 5 per cent. on the title deeds of these farms, repayable to the Home Government in terms of three, five, and seven years, the Colonial Governments being responsible for the collection and transmission home of the money.

Unless some measure of this sort is adopted very soon, with failing manufactures, a population thrown more every day out of employment, with a capital of nearly 500 millions locked up in machinery and buildings, &c., we shall have a very serious crisis in this country, and I see no statesman on the scene who is preparing for this difficulty, and has the pluck to propose a measure of this description to the country.

Colonel MONCRIEFF, F.R.S.: As so few people have visited that magnificent territory through which this railway is proposed to pass, I think it a good opportunity to say a very few words about its character, having been there myself. When the line was drawn between the Canadian and American possessions, although the Americans as usual stole a march upon us and put it further north than was originally intended, it is a remarkable fact that the line in this longitude cuts off a very poor district lying between the Missouri and British territory, and which from the poverty of the soil cannot support more than a sparse population, whereas on the other or north side of the line you get into a better and richer country, embracing the Assiniboin and the two valleys of the Saskatchewan. That river is navigable for hundreds of miles, and will be a useful artery for commerce, its two forks running towards Winnipeg, and extending back west towards the Rocky Mountains, drain an enormous area. A great part of this area is capable of cultivation, and has many resources, among others coal. It certainly enjoys a healthy climate for our race. The climate in the valley of the Saskatchewan is better than that of Canada in the corresponding latitude, as the isothermal lines rise towards the west. I have known troops of horses in winter wandering there without any attention whatever in the bush; in fact twenty years ago, and it may be now for what I know, it was the custom of settlers in Selkirk settlement to send out large troops of horses to the bush, where they lived without any attention all the winter, and they were herded back when required for summer use. This splendid region is so little known and appreciated that the charge of making a railway through it, which would open it up and enormously increase its value, is thrown first by Canada on England for want of means, and then back by England on Canada for want of knowledge. My own opinion is that if the real facts of the case were known on the Stock Exchange and by our rich people, and if they knew the concessions of land which could here at once be made to the railway, instead of thus holding back, there would be a rush to secure shares in such an enterprise. So much for the scheme as a legitimate and ultimately profitable speculation. It is, however, on the ground of its Imperial and strategical importance that the strongest reasons for its construction are to be found. Here is a great field for our surplus population; and if England has not lost the Imperial faculty of organizing arrangements for her people, why should not some such scheme as that proposed by Colonel Strange for making the colonization, the military defence, the construction of the railway, and the proper and orderly government of that country go hand in hand and be thus carried out? What has been said by other speakers and in the paper on the strategic importance

of connecting "the two nostrils" of British North America I hope will rouse attention to this matter in the proper quarters.

Colonel ALCOCK: Colonel Moncrieff has touched upon a very important subject in mentioning the Stock Exchange, because the mistake that this country has made has been in investing money in foreign securities instead of investing it in Imperial, that is, in colonial securities; and to give the strongest possible instance with respect to a railway, the Russian railways have been built with English money, and but for that we should not have had the recent war. Russia would not have been prepared for it as soon or as well as she was, to say nothing of Central Asia and her progress towards the East.[1]

Mr. YOUNG: I should like to express my own individual gratitude to Colonel Strange for the very clear and able way in which he has placed before us the professional aspects of this important question. He has shown us the great shortcomings which exist in carrying out the details of these military matters which are of such vital interest to Canada. The whole question seems to resolve itself into one of cost. How then is the money to be obtained for carrying out this most necessary work for the proper defence of Canada? Is it to be thrown on the resources of the Dominion alone, or are we not rather as a people living under one Sovereign to recognise it as a question of Imperial, or I would rather speak of it as of national, importance. If that be so, I do not know how we can refuse to recognise our responsibilities with regard to it, and the importance of our doing what is required of us as a nation, in order to carry it into effect. The principal point dwelt upon in the discussion this afternoon has been the necessity of completing the Pacific Railway; and there is no doubt the Canadians are perfectly desirous of seeing it done; but they consider it impossible for them to do more than they are doing at present. Unless they can have the Imperial aid which I think they have a right to claim, it will be many a long year before that great and essential work is likely to be completed. In the meantime it is a most serious question to recollect that British Columbia, which is the terminus at the other end, is in great danger of taking some steps towards separation from the Dominion, and of falling into the hands of another nation. This is a very serious consideration for us to contemplate, and there can be no doubt that it is much more imminent than many people in England have any idea of. What is wanted, after all, is for some one on the part of those who profess to be statesmen to take a statesmanlike and comprehensive view of these matters. We are too apt in this country to look far too much merely to our local interests, and do not extend our vision to the more remote corners of our enormous Empire. But it will not do for us to continue to dwell in such a "fool's paradise" very much longer, or we shall be some day suddenly awakened to a very serious condition of things. The question of emigration has been touched upon. It is a national one. It does seem to me most extraordinary that we in England who are continually complaining of our being overpopulated, and are constantly seeing the terrible distress that occurs in many of our great centres of population from an undoubted superabundance of people, cannot evolve some national scheme for taking that surplus away to the other parts of our Empire which are urgently wanting them, and only require them to be properly transported to their shores. These are questions which we must frankly face before long, and it is very desirable that so influential a class as military and naval men should turn their attention to them, in order to force the Government to take them up, in deference to enlightened public opinion, in a way which their paramount national importance demands.

The CHAIRMAN: I am not one of those who believe in the decadence of England, or in the incapability of our statesmen, our merchants, and our financiers, to grasp

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[1] Whether I am strictly correct or not in what I said about Russain railways, it will be admitted that they are strategical, and more for the movement of troops and artillery than for any remunerative purpose, while those in Australia, for instance, are for the development of the resources of the country, and the money expended on them by their Government is reproductively employed, and therefore to be preferred as an investment from a financial and philanthropic, as well as from a patriotic point of view. T. St. L. A.

a great idea and carry it out. Much that has been said of their folly and infatuation in not completing this Pacific Railway appears to me gratuitous and unfounded. There are enormous difficulties in the achievement of such a project; the idea of the Canadian Government is to execute the railway step by step, as there shall be a population to benefit by it, or as sections of 100 or 200 miles can be shown to be profitable; and if we only allow time, it will find its way by that process to the Pacific. But I must say, I for one should think it the height of folly on the part of the Canadian Government to rush into this great work in its entirety at the present time, or for any party of English statesmen, responsible to the people of England for their taxation, to volunteer to lend them 20,000,000*l.* or any similar sum that they might require. Gentlemen of the Stock Exchange can tell you something of the capital that has already gone to Canada for making railways, scarcely one of which at present pays. I think, therefore, we must be a little patient; we cannot anticipate what is really the work of the slow development of history. We have no more marvellous proof of the rapidity of that development than in the subject which has been brought before us by Colonel Strange to-day. It is but 40 years since a handful of French Canadians, on grounds so obscure that they are almost forgotten, half frightened us out of our senses lest we should lose Lower Canada, led to enormous and costly efforts to suppress them, and to the occupation of the country for the next 30 years by a strong Imperial garrison. Now the country is in a far more loyal position and temper towards the British Empire than it ever was before. It has developed what is a perfectly new thing in Colonial history, a regularly organized, well-conceived militia system, embracing every branch of instruction from the highest to the lowest, not realised perhaps as fully as it exists on paper; but there is the seed, out of which the matured plant may hereafter grow. Can we not be contented with that for one generation? Can we not let these magnificent dreams of empire work themselves out according to the destiny of nations? Where is the present danger? What was the condition of the United States itself in regard to its military armaments prior to the great contest of North and South? Why, they were as thoroughly neglected as they were in Canada; they thought themselves free from external foes, and therefore could afford to dispense with them. They have since developed them to some extent, but they are still, as measured by the scale of European preparation, in a very defective state. Canada can also afford to leave much that is in an abstract sense important, to be met when the necessity arises Of course we admit the necessity of having a foundation laid to carry any future superstructure; but to say that everything that may have to be done in war is to be done in anticipation in time of peace, is to ask what no responsible statesman can agree to; and I do not think that any one of us, if we were addressing a constituency with a view to election to Parliament, would venture to adopt such a line of argument.

Colonel STRANGE: I thank you very much for the remarks that have been made, which I think are even more valuable than the paper itself. I have not heard that the secession question of British Columbia has been settled in Canada. Sir Cooper Key remarked that the English Government were not in a position to interfere in this matter. To a certain extent of course we all know that is quite true, but surely to purchase shares in a Canadian Pacific railway would be as legitimate as to purchase shares in the Suez Canal. Surely we are as closely connected with Canada as we are or might be with Egypt. I have also been asked whether there has been a vote before Parliament for a small-arms factory in Canada. The matter has never been brought before Parliament. I have urged it in Official Reports, in Blue Books, which are laid before Parliament, but apparently never read.

With regard to Sir Henry Lefroy's remarks, I am not in a position exactly to answer them. I know his long familiarity with the country and his great wisdom, and it would seem presumption for me to say anything on the subject in the way of reply. He alluded to the Rebellion of 1837, as giving us 30 years' military occupation and trouble, but another speaker pointed out it was the want of considering what the French Canadians wanted in time that was the cause of all this, and Sir Henry himself has alluded to the marvellous development of things now-a-days that requires us to be up and doing, and will not allow us to drift as we used to drift in the old times. He spoke about American people not having military institutions and orga-

nization until the Civil War obliged them to; but would they have had any civil war at all if they had thought about it a little beforehand? Then as to the security of money lent to Canada, I have already referred to the difference between the Pacific and the Grand Trunk, in which the English people took shares, and in which Canadian people had scarcely any shares at all, and in which there were not vast tracts of rich arable alluvial land to give away. If the Saskatchewan Valley is as everybody says it is who has seen it, a rich fertile alluvial soil, where there is coal cropping out from the banks of the river ready to be used, I must submit with all the rashness of youth, I cannot see any reason why this railway should not be made.

The CHAIRMAN: I think I may venture in your name to return to Colonel Strange our hearty thanks for a most interesting, original, and thoughtful paper. I should answer Colonel Strange's last remarks about the Saskatchewan, by saying I have had no other feeling than a wish to dispel illusions. When you talk of the Saskatchewan and talk of many thousands of square miles of territory, no doubt in those thousands of square miles there are fertile tracts where grain can be raised, and there is some indifferent coal. But it is a great mistake to suppose that the whole region is so fertile, or that the climate is altogether such as Englishmen would delight in. I think I may express our united hope that Colonel Strange in returning to Canada and to his very important duty there, will return having his hands strengthened by whatever moral influence our approval and respect for his energy and zeal can afford him, and that he will be enabled in his future negotiations with the Canadian Government to carry, as well as he deserves, a greater degree of weight than appears to have been hitherto given to him.

APPENDIX.

"MILITIA GENERAL ORDERS.

"*Head Quarters,*
"*Ottawa, 20th October*, 1871.

"An appropriation having been sanctioned by Parliament for the pay, maintenance, and equipment of two batteries of garrison artillery, in order to provide for the care and protection of the forts, magazines, armament, and warlike stores, recently or about to be handed over to the Dominion Government, in the provinces of Ontario and Quebec, the formation of these batteries is hereby authorized.

"It is further intended that these batteries, in addition to performing garrison duties, shall serve as practical schools of gunnery for the training of all ranks of the Militia Artillery, viz.:—by instructing gunners and drivers, and affording Officers and non-commissioned officers opportunities of joining long or short courses of instruction as may best suit them individually.

"SCHOOL OF GUNNERY, KINGSTON.

"A battery, to be designated 'A' Battery, will be formed, the maximum strength of which is to be 138 of all ranks[1] and 8 horses (for instruction in riding, driving, moving field and siege guns, and general purposes).

"'A' Battery will furnish a detachment for duty at Toronto.

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[1] One Subaltern has been added to "A" Battery, none to "B," which has a larger fortress and armament to look after, as well as the increased labour of instruction incident to the use of two languages, French and English.

"SCHOOL OF GUNNERY, QUEBEC.

"A battery, to be designated 'B' Battery, will be formed in a similar manner, the "maximum strength of which is to be (so long as the forts at Point Levis remain "unarmed) 159 of all ranks and 8 horses.

"This battery will furnish detachments for the forts of Levis and St. Helen's "Island, Montreal.[1]

"*Selection of Non-commissioned Officers and Men.*

"The non-commissioned officers and men to form 'A' and 'B' Batteries will be "selected from those belonging to the Militia Artillery of the Dominion who may "voluntarily engage therein for twelve months' duty (or for a longer period if they "may so desire, and it is found expedient in the interests of the public service to "approve of the same); they will be required, however, to re-enrol for three years' "further service in their own batteries from the date of their joining 'A' and 'B' "Batteries, and whilst serving with these latter they will be returned as super-"numeraries on the rolls of their respective corps. Men desirous of joining 'A' and "'B' Batteries, who are not enrolled members of any corps, or who belong to other "than artillery corps of the Active Militia, may also, if approved, be appointed to "'A' and 'B' Batteries, but they will be required in like manner to enrol for three "years' service in some battery of artillery of the Active Militia.

"Officers and non-commissioned officers selected will receive instruction, in addi-"tion to field and garrison artillery exercises, in the mode of making rafts, military "bridges, &c., pontooning, formation of field works and batteries, laying gun and "mortar platforms, &c., &c.

"Those Officers and non-commissioned officers leaving the School at the end of "three months will be entitled to first and second class gunnery certificates, provided "they are found qualified.

"*Batteries on Actual Service.*

"The Officers, non-commissioned officers, and men belonging or attached to 'A' and "'B' Batteries will, for purposes of discipline, be held to be called out for actual ser-"vice with their respective Militia Corps, as provided for in Section 64 of the "Militia Act. The Commandants of the Schools of Gunnery may reduce non-com-"missioned officers for misconduct or inefficiency, and dismiss from the Schools "gunners who at any time by their conduct, character, or from other causes are not "likely to benefit the service by their retention in such Schools of Instruction.

"*Liable to duty in any part of Dominion.*

"All Officers, non-commissioned officers, and men belonging or attached to 'A' and "'B' Batteries will be liable to duty if required in any part of the Dominion of "Canada, for the whole or any portion of the period they may be on the strength of "these batteries.

"*Command.*

"The above Schools of Gunnery, with any detachment therefrom, are placed "under the immediate command of their Commandants, who will report direct to "Head-Quarters, and receive instructions solely from the Adjutant-General.

"*Forts, &c., handed over to Commandants.*

"The Director of Stores and Keeper of Militia Properties is hereby instructed to "hand over, as soon as convenient, to the Commandant of the School of Gunnery at "Kingston, the whole of the forts with the armament and stores hitherto in charge "of the Officer commanding the Royal Artillery at that station, also the whole of

[1] The forts have since been partially armed, but the strength of the "B" Battery has not been increased.

" the quarters for Officers, non-commissioned officers, and men, guard-rooms, and " other buildings at the *Tête du pont* Barracks, the buildings contained in the new " fort, Toronto, and stores at the old fort, when required. The forts and works at " Quebec and Point Levis, with the armament and stores about to be handed over " by the Royal Artillery, will in like manner be transferred to the care of the Com- " mandant of the School of Gunnery at Quebec, also the barracks with the " mounted guns and stores connected therewith at St. Helen's Island, Montreal.

" *Schools of Gunnery—St. John and Halifax.*

" Arrangements are being made for the formation of Schools of Gunnery at " St. John, New Brunswick, and Halifax, Novia Scotia, the details of which will be " announced hereafter in General Orders.[1]

" By command of His Excellency the Governor-General,
" P. ROBERTSON-ROSS, Colonel,
" *Adjutant-General of Militia,*
" *Canada.*"

EXTRACT FROM REPORT ON " A " BATTERY, SCHOOL OF GUNNERY.

" *Kingston, Ontario,* 1878.

" During the past year 4 Officers and 122 non-commissioned Officers and men " joined this school. Of this number 3 Officers and 72 non-commissioned officers " and men joined for a three months' course of instruction, 1 Officer and 23 non- " commissioned officers and men were retained for a further service of 12 months, " 38 non-commissioned officers and men enlisted or re-enlisted in " A " Battery for " three years' continuous service.

" The following certificates have been issued during the year 1878:—

	Long Course.		Short Course.					Total.
	1st Class.	2nd Class.	1st Class.	2nd Class.	3rd Class.	4th Class.	Attend-ance.	
Officers	..	1	2	1	..	..	..	4
Non-commissioned officers and men	..	..	7	7	9	9	64	96
Total	..	1	9	8	9	9	64	100

" It is to be hoped that the permission granted in recent General Orders for " Officers to present themselves for examination at the Schools of Gunnery, and if

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[1] Not carried out. Classes for infantry instruction during the winter were formerly carried on at the head-quarters of each military district, a premium of 50 dollars being given to every person obtaining a certificate, but it was found that only a small proportion of those obtaining the premium gave the country the advantage of their instruction by subsequently joining the Militia, while the expense was considerable. The pupils not being placed in barracks, and taught only in drill-sheds, made but little practical acquaintance with military discipline or field exercises. The Artillery Schools having been made partially available for infantry and cavalry instruction the winter classes were done away with, except in New Brunswick and Halifax. The Officers in command of those districts, Colonels Lawrie and Maunsell, being energetic Officers formerly in Her Majesty's regular Army, have no doubt made the best of the means at their disposal.

" successful to obtain 2nd class certificates, will act as an inducement to a number of " those gentlemen who have hitherto been unable to attend the short course of in- " struction, and that they will now endeavour to better qualify themselves for the " duties of the positions they occupy, by acquiring a sufficient knowledge of artillery " drills and exercises.

" I am still of opinion that it would be advisable to limit the tenure of such " Officers' appointments to a certain date, say 10th December, 1879, before which " time they should be required to pass the examination for 2nd class short course " certificates at the School of Gunnery.

" The annual rifle practice, 40 rounds per man, was carried on as usual, with very " good results.

" Owing to the services of the battery being required at Montreal from the 9th " July until the 16th July, during which period they were encamped at that city, " it was not considered necessary to have the usual summer camp on the lake " shore.

" During the summer months the Officers and men of 'A' Battery went " through a course of instruction in the formation of rafts and raft and spar " bridging.

" I am very glad to be able to report that the general conduct of the men of " 'A' Battery during the past year has been extremely good, and that I have every " reason to be satisfied with the ability and zeal of the Officers and non-commissioned " officers of this instructional staff. The results of the competition for the prize " essay, field-gun practice, and shifting heavy ordnance, instituted by the Dominion " Artillery Association, and duly reported in their proceedings, will, I have no " doubt, afford sufficient evidence as to the character and results of the instruction " carried out at this Institution.

" D. T. IRWIN, Lieutenant-Colonel,
" *Commandant, School of Gunnery,*
" *Kingston, Ontario.*

" *To the Comandant, School of Gunnery,*
Quebec."

EXTRACT FROM REPORT ON "B" BATTERY, SCHOOL OF GUNNERY AND BRANCH "SCHOOL, MONTREAL.

" *Citadel, Quebec, December,* 1868.

" SIR,—During the year ending 15th December, 1878, 27 Officers and 111 non- " commissioned officers and men joined for instruction. Of this number the Officers " were as follows:—

" *Artillery.*	
" Short course	15
" Long course	4
" *Cavalry.*	
" Short course	1
" Long course	1
Infantry.	
" Short course	3
" Long course	1
" *Engineer.*	
" Short course	1
" By examination, in accordance with G. O. (12) " 10th May, 1872	1

" Of the above, 66 were non-commissioned officers, gunners, and drivers from " various Artillery Militia corps in Quebec and the maritime Provinces. In addition, " 26 non-commissioned officers and men engaged in 'B' Battery. In the Branch

" School at Montreal, 7 Officers and 16 non-commissioned officers, gunners, and " drivers obtained certificates. These are included in the above, and shown in " returns A, B, C, D.

" Subjects of instruction at the Quebec School are as follows. It is in my opinion " to be regretted that a uniform system has not been established at both schools by an " Artillery Officer at head-quarters, giving to certificates of both schools a relative " value:—

" SYNOPSIS OF OFFICERS' SHORT COURSE, GUNNERY SCHOOL, QUEBEC.

" *Practical Exercises and Duties.*

" *Garrison Artillery.*	" *Field Artillery.*
" Arm drill.	" Field-gun drill.
" Company drill.	" Riding and driving drill, wheel-car-
" Heavy gun drill, S.B.	" riages, on sleighs.
" do. rifled.	" Field battery movements.
" Mortar drill.	" Disabled field ordnance, removal of.
" do. (removal on trench carts.)	" Knotting and lashing.
" Gyn drill.	" Mounted sword exercise.
" Shifting ordnance.	" Gun practice.
" Sling waggon.	" Making up ammunition.
" Knotting and lashing.	" Examination and sighting of ordnance.
" Gun practice.	" Taking angles with sextant for range-
" Making up ammunition.	" finding.
" Examination and sighting of ordnance.	" Interior economy.
" Taking angles with sextant for range-	" Stable and regimental duties.
" finding.	" Attending courts-martial.
" Visiting (weekly) artillery stores and	
" district.	
" Interior economy and regimental duty.	
" Attending courts-martial.	

" Officers will give their special attention to those subjects which belong to their " own branch of artillery service, but will be expected to have a general idea of the " whole.

SYNOPSIS OF SHORT COURSE, GUNNERY SCHOOL, QUEBEC.

" *Theory.*

" Gunnery, exclusive of applied mathematics.
" Knowledge of artillery material, such as exists in Citadel, Quebec.
" Laboratory operations as performed at Quebec.
" Examination and sighting ordnance.
" Elementary fortification.
" Minor tactic of artillery, in connection with the other arms.
" Range-finding, use of sextant and prismatic compass.
" General knowledge of Militia Regulations, Queen's Regulations and Articles of War, " as applicable to Militia.

" SYLLABUS OF OFFICERS LONG COURSE, GUNNERY SCHOOL, QUEBEC.

" *To be able to instruct in*

" Gun drills, " Mortar drill, } and practice with projectiles.
" Gyn drill.
" Shifting ordnance.

" *To have a good knowledge of*

" Infantry drill.
" Riding drill and stable duties.
" Field artillery movements and position.
" Artillery material and stores.

" Examination and sighting ordnance.
" Laboratory operations.
" Construction of siege batteries, rafts, and bridges.
" Gunnery and applied mathematics.
" Fortification and sieges.
" Military surveying and reconnaissance.
" Tactics of all arms, strategy, and military history of one campaign.
" Interior economy, regimental duty, and charge of armament of the fortress.
" Queen's Militia Regulations, and Articles of War as applied to Canadian
" Militia.

" T. B STRANGE, Lieutenant-Colonel,
" *Commandant S. G. and I. of A.*

" (A.) Garrison Artillery, Infantry, and Engineer Officers, Quebec School of " Gunnery and Branch School, Montreal.
" (B.) Field artillery and cavalry Officers, School of Gunnery, Quebec.
" (C.) Garrison artillery non-commissioned officers and gunners, Quebec School " of Gunnery and Branch School, Montreal.
" (D.) Field artillery non-commissioned officers, gunners, and drivers, Quebec " School of Gunnery and Branch School, Montreal.
" As the wants and circumstances of the School remain the same, I beg to draw " attention to previous recommendations and remarks, viz. :—
" ' The number of applicants to join the battery for three years' service, as also " ' for short courses of three months, is more than in previous years, and far in " ' excess of the number sanctioned. As it would be impossible either to carry out " ' the garrison duties, or even provide squads for instruction, if vacancies were kept " ' open, very eligible men have to be refused admission because there happen to be " ' no vacancies when they apply. They frequently ask to join without pay to take " ' their turn of a vacancy.
" ' Under the circumstances, it is to be regretted that an increase of short-course " ' men from the Militia batteries is not sanctioned, especially during the winter " ' months. For while the artillery of the maritime provinces (from which the number of applicants is on the increase) is without a special gunnery school, the " ' Quebec Gunnery School is crippled by not having enough men to form squads " ' for instruction and to carry on the duties of the garrison and necessary fatigues, " ' especially in the field artillery branch, which cannot be efficient without the " ' establishment of a complete field battery of instruction; that is, an increase of " ' 28 horses (in addition to the present strength), and 3 Officers and 70 non-com- " ' missioned officers, gunners, and drivers. If 16 horses were added to the above, " ' to horse four ammunition waggons, there would be a complete field battery at " ' each gunnery school ready for immediate service, while the waggon teams could " ' be used as a cavalry riding school as well as performing the transport duty for " ' the store department under ordinary circumstances, saving cart hire."
" ' Having a selection, the class of men joining the battery is not in my opinion " ' inferior in physique, education, or conduct to any troops it has been my lot serve " ' with.
" ' From a purely civil point of view, I think it is a drawback to the development " ' of a new country that the force at Quebec is not permitted to be increased. Many " ' Canadians, as well as immigrants of a good class, would, if permitted, train " ' themselves as Canadian soldiers and become Canadian citizens. Not readily " ' finding employment in times of depression, they cross to the United States or " ' return to Europe with depreciating accounts of the country.'
" The branch school detachment at St. Helen's (which was withdrawn after the " loss by fire of the barracks), it was found necessary to send back again this summer, " in consequence of riots and the insecure state of the arms and military stores kept " at that important depôt. The detachment has been again withdrawn owing to the " insufficient number of 'B' Battery at Quebec.
" The Militia of Montreal is composed of classes in business, who cannot leave the " city for a course of instruction, a branch school is therefore much needed.

" The fortress at Isle-aux-Noix is very important and still in fair condition, with " bomb-proof barracks and every accommodation for a garrison.

" The establishment of a branch school there for garrison artillery, engineers, and " infantry would be a desideratum. It could be formed of a demi-garrison battery " of 50 men and 3 Officers on the strength of the Quebec Gunnery School from which " reliefs should be sent. They would form an efficient frontier garriron as well as a " school of instruction, and allow of the fortress being armed and kept in order. On " each recurrence of the threat of invasion a detachment of 'B' Battery, which it " can ill afford to spare, has been held in readiness to garrison this fort.

" The General Officer Commanding has already suggested military schools at " Toronto and St. John's, P.Q. I have no doubt Lieutenant-Colonel Irwin " would concur in the advisability of establishing such a branch school as a detach- " ment from 'A' Battery, which should be augmented for the purpose. The General " Order forming the batteries provides for detachments from them at Toronto and " Montreal respectively, but their limited numerical strength has prevented these " detachments being of any great practical value.

" The camp for field artillery practice was on the Island of Orleans; that for " musketry instruction at Engineers' Park, Levis; the headquarters remained in the " Citadel, under command of Lieutenant-Colonel Montizambert, during the time my " duties as Inspector necessitated my absence, which was prolonged this year in " consequence of the visit to British Columbia of the Inspector for Ontario. The " Gunnery School printing press has furnished copies of examination questions as " well as copies of artillery manuals, for the use of Militia of the Dominion, also the " necessary circulars for the Dominion Artillery Association.

" 'While the Quebec Gunnery School has been practically expanded into a school " for Officers of all arms, thereby much increasing the labour of the staff, no adequate " provision has been made for men, without which, the military art can no more be " taught than chess without pawns.'

" 'The Lieutenant-General Commanding is fully cognizant of the points referred " 'to, and has suggested effectual remedies from time to time. I trust, however, the " 'emergency of the case may be an excuse for reporting upon facts with which he " 'is already familiar.'

" Notwithstanding the heavy night duty, the usual daily duties, fatigues, &c., the " courses of instruction have been carried out.

" The usual courses of gymnastics for young soldiers has been continued.

" The system of bi-hourly meteorological observations by means of the non-com- " missioned officers of the guard relieving sentries has been also continued.

" The averages are taken by Lieutenant Donaldson, who has charge of instruments, " and reports through me to Professor Kingston, of the Toronto Observatory, who " speaks very favourably of the results thus obtained. A grant of 60 dollars having " been sanctioned for telegraphic instruction, four sets of instruments were purchased, " wires &c., fixed. Instruction has been given to six Officers and one non-commis- " sioned officer, by Major Hebert, formerly Superintendant of the Telegraph Insti- " tute, Montreal, who is at present at the Gunnery School. It was thought that " the valuable knowledge so given could be utilized to concentrate the fire of the " fortress or to explode torpedoes, as well as for the ordinary needs of military " telegraphy.

" The flags supplied with the Army and Navy Signal Code have also been made " use of to a slight extent, to communicate with the Levis forts and Her Majesty's " ships while in harbour, but the small numbers of the garrison and their many duties " prevent much systematic instruction being carried out.

" From the Governor-General Commanding Canadian Militia, I obtained permis- " sion (during the period that war with Russia seemed imminent) to communicate " with the Officer then commanding Her Majesty's forces at Halifax, Colonel " Elgee, R.A., with a view to sending a detachment of Officers and non-commissioned " officers from 'B' battery to learn the manipulation of torpedoes, but I found I " could not have spared sufficient men for the purpose.

" The six additional artificers are gunners who have been excused guards and " ordinary duties to work in the forge, armourer's, wheeler's, carpenter's, and harness " maker's shops. They have, at less than the cost of importation, as before shown,

" manufactured carriages for the 7-inch Palliser guns presented by Sir William for " the armament of this fortress, in addition to executing a vast amount of repairs to " the barracks and equipment of the battery. A company of 50 artillery and engi- " neer artificers added to the battery as recommended by the General Officer Com- " manding, and by the various Boards of Survey on fortifications, would save a large " amount of money to the public. They would also serve as a school for infantry, " which, in my opinion, should in this country be entirely composed of artificers, " and kept at military work, making and repairing material, as well as keeping in " order fortifications, barracks, &c., by periodical pointing of masonry before heavy " expenditure becomes necessary from long-continued neglect. I must in this con- " nection draw attention to paragraph 10 of Lieutenant-Colonel Irwin's Report on " A " Battery S.G., in which he complains of the absence of any system by which " Officers placed by general orders in charge of fortifications, might direct or in some " way supervise and report upon the repairs considered necessary, and upon the final " character of such repairs, when executed by the Public Works or other depart- " ment.

" The service of the battery were called in aid of the civil power at Quebec on 1st " May, 12th June, and 17th September, and at Montreal on the 12th July, while " those of the detachment of 'B' battery from St. Helen's were on duty in various " localities for a protracted period. It is not necessary for me to refer in detail to " these services, as they have been already noticed in General Orders in terms of " approval by the General Officer Commanding.

" The ten 64-pounder Palliser guns purchased for Quebec, as well as the 7-inch and " 8-inch guns presented by Sir W. Palliser, were landed by the battery and mounted " as far as the racers and platforms laid by the Public Works Department admitted. " One 7-inch B.L.R. gun platform only has been completed at the Levis forts (No. 1), " on which the gun has been mounted. A 64-pounder Palliser has been also mounted " at Orleans Island for gun practice.

" It would be very desirable if the small outlay required to cover the guns so " placed on Orleans Island could be sanctioned, a half-sunken battery reveted with " iron-band gabions could be erected by the men of the battery at a trifling cost.

" In conclusion, I beg respectfully to remark that the instruction of infantry, " cavalry, engineers, and artillery is best carried on by working together under a " single director, with regimental Officers for each arm. In the circumstance of " Canada, where the money vote for military purposes must be very limited, the con- " tinuous tactical instruction of any or of all arms can only be so managed, and by " having recourse to skeleton manœuvres, reconnaissance, occupation, attack and " defence of positions, &c. No arm can be thoroughly educated by itself; and the " necessary small bodies of regular troops that can be permanently maintained in " Canada, if disseminated in small separate schools for each arm, will, in my opinion, " fail to give instruction beyond barrack yard drill, and a certain limited experience " of interior economy, alone possible to a detached company, or even larger body of " infantry. It is only possible to give such theoretical instruction in fortification, " reconnaissance, and the art of war generally, in establishments with a certain staff, " and a considerable number of Officers as pupils. In these days the military instruc- " tion that is limited to drill, neatness of turn out, &c., is of little value when not " combined with some higher military knowledge. The examination returns of the " Quebec Gunnery School, show how naturally the instruction of engineers and " infantry falls in with that of garrison artillery; as the garrison artillery Officer " and gunner or engineer must be taught infantry drill before he becomes a gunner " or engineer, so the cavalry instruction fits in with that of the mounted artillery, " who must be trained as cavalry. After seven years' experience I cannot alter my " opinion, that the limited expansion necessary to enable the Gunnery Schools to " become schools for all arms, as well as garrisons and nuclei to the Militia in time " of need, is the most economical and efficient means of maintaining a permanent force. " In a country happily exempt from the probability of frequent wars, it is essential " that such Officers and soldiers as are permanently enlisted should be continuously " employed in instruction of the National Militia, to keep bright their own know- " ledge. Such detachments as are necessary for small garrisons and branch schools, " should be commanded from, and frequently relieved by the Central School, other-

" wise the necessity of snow fatigues, wood cutting, &c., which prevent the regular " instruction of a small detachment (especially in a climate like Canada) combined " with other influences, tend to certain deterioration, and is at best, in my opinion, " a waste of public money.

" T. BLAND STRANGE, Lieutenant-Colonel, R.A.,
" *Commandant, School of Gunnery,*
" *Quebec.*"

" *Royal Military College of Canada,*
" *Kingston, Ontario.*

" The Military College is established for the purpose of imparting a complete " education in all branches of military tactics, fortification, engineering, and general " scientific knowledge in subjects connected with, and necessary to, a thorough know- " ledge of the military profession, and for qualifying Officers for command and for " staff appointments.

" The length of the course of instruction will be for four years.

" *Instructions during the year* 1878.—*Theoretical Subjects.*

" The subject of theoretical instruction of the several classes have, in accordance " with regulations, been as follows :—

" *8th Class.*

" Mathematics.
" Geometrical drawing.
" French.

" *7th Class.*

" Mathematics.
" French.
" Geometrical drawing.
" Fortification.
" Military topography and civil surveying.
" German.

" *6th Class.*

" Mathematics.
" French.
" Descriptive geometry.
" Fortification.
" Artillery (theory and construction of).
" Military topography and civil surveying.
" German.
" Military administration.

" *5th Class.*

" Mathematics.
" French.
" Descriptive geometry.
" Fortification.
" Tactics.
" Artillery (theory and construction of).
" Military topography and civil surveying.
" German.
" Military administration and law.

" *4th Class.*

" Mathematics.
" French.
" Descriptive geometry.
" Fortification.
" Strategy and tactics.
" Artillery (theory and construction of).
" Military topography and civil surveying.
" German.
" Military administration and law.
" Reconnaissance.

" The class work during the year demonstrates increased application to study and " considerable improvement in the rate of progress, on the part of the cadets, and " the general result of the several examinations held in the spring term affords a " distinct advance on those of previous terms.

" The general knowledge of the Cadets who joined during 1878, as exhibited by

" examination after joining the College, is above the average of the Cadets of pre-
" vious batches. This is gratifying, as tending to show that the educational estab-
" lishments of the country are preparing their pupils for admission to the Royal
" Military College.

" *Requirements to complete the specified course of Education.—Theoretical Subjects.*

" By regulation approved in Council, the whole of the classes should have received
" instruction in *freehand drawing* and *painting* since January, 1878, and the 4th
" class in *civil engineering, chemistry, electricity,* and *geology* since September, 1878,
" but in default of instructors for these subjects, it has not been practicable to carry
" out the prescribed course. I beg most strongly to urge that provision may be
" made, by appointment of professors for these branches, for commencing those
" subjects next term, viz., February, 1878.

" The want of instruction in freehand drawing especially has already injuriously
" affected both the progress of the cadets and the general curriculum of study.

" The general course of education is so arranged that proficiency attained in some
" one subject may, at the proper time and point, prepare for and assist in the study
" of some other subject; indeed a certain amount of knowledge in one branch is not
" unfrequently *indispensable* for the prosecution of another. I may add that the
" cadets themselves are fully alive to this fact, and are keenly anxious to possess the
" facilities for learning subjects which they are conscious that they are now suffi-
" ciently advanced in education to undertake with profit and the facilities for which
" they, with justice, fully expected to be accorded to them.

" The importance, both to the country and to the individual, that the subjects
" alluded to should be studied as originally intended, and that they should be taught
" by highly qualified and thoroughly capable men, cannot be questioned.

" The number of cadets is now such that it is not possible for one professor to
" pretend to give, without an assistant, adequate and personal instruction in any of
" the branches of instruction, still less for him to attempt to teach more than one
" subject.

" The professors feel and represent to me that, in spite of their strenuous efforts,
" the inability to give sufficient attention to each cadet individually is becoming a
" very serious evil, and I entirely endorse their opinion. I respectfully submit that
" this matter may receive early consideration and remedy, as being one which the
" interests of the country and cadets are equally concerned.

" *Instruction during year.— Practical Subjects.*

" The cadets of 1st, 2nd, 3rd, 4th, and 5th terms have been practised in infantry
" drills, gymnastics, swimming, &c.; and those of the 2nd, 3rd, 4th, and 5th terms
" in garrison and field artillery drills and exercises in addition.

" The cadets have gone through a systematic course of rifle (Martini-Henry)
" instruction with target practice, and also of artillery target practice with common
" and shrapnel from 9-pounder M.L.R. gun.

" The average obtained by the cadets in rifle practice was extremely good, and the
" artillery practice was fully equal to the average of perfectly trained gunners.

" A regular guard of cadets (those in their first term excepted) has been mounted
" twice a week, and the duty has been performed steadily and satisfactorily.

" The service of a sergeant instructor in gymnastics, swordmanship, fencing, &c.,
" has proved of substantial advantage, and the cadets now enjoy every facility for
" the cultivation of their physical powers and of acquiring readiness of hand and
" eye, under skilled supervision, and therefore without danger of accident.

" A full battery of four 6-pounder smooth-bore field guns has been received. These
" guns, on account of their comparatively light weight, are better fitted than the
" 9-pounder M.L.R guns for the cadets to practise field movements with hand drag
" ropes in place of horse draught.

" These guns are used only for field manœuvres, but not for other drills or target
" practice.

" *Requirements to complete the specified course of Education—Practical Subjects.*

" Instruction and practice in equitation should, in accordance with Regulations of " Council, have been commenced last September, but no horses have as yet been made " available for this service.

" An Officer who cannot ride is useless on the Staff or for any mounted corps or " duty; every Officer is likely to be called upon to perform mounted duty, while all " should aspire to Staff employ.

" A man seldom becomes even a moderate horseman unless he learns riding during " his youth.

" The addition of about fifteen horses to the Kingston 'A' Battery, School of Gun- " nery, would render it an effective field battery (which, for want of horses, it is not " at present) and at the same time enable it to provide the necessary facilities for " practice of equitation by the cadets of the Military College. This addition of " horses would also probably suffice to enable a limited number of cavalry Officers " and non-commissioned officers to be attached to 'A' battery for the purpose of " going through a much needed course of riding.

" At all military educational institutions similar to the Royal Military College " there is always a detachment of regular soldiers who perform certain necessary " duties far more economically and satisfactorily than civilians, and by a very small " increase to 'A' battery the latter might afford similar assistance to the College, " while having the men available for recall to their battery as gunners for any " emergency.

" The prescribed course of military drills and exercises is designed to culminate " with practical exercises in military engineering. It is to be regretted that the " absence of the necessary facilities prevented this instruction from being commenced " last September, and I beg to urge that provision be made at the earliest possible " date to render the ultimate completion of the intended course feasible.

" The honourable distinction which has been recently granted to the College by " the conferring upon it of the designation 'Royal Military College of Canada,' " forms a step in the history of the institution.

" It is especially gratifying as an evidence that the military spirit, high tone, con- " duct, and ability of the gentlemen cadets has not passed unnoticed, but has been " considered to merit for the College the same title which the old military schools of " Great Britain are justly proud to bear; and it thus draws nearer and forms another " bond of comradeship between the Militia of Canada and the other military forces of " Her Majesty.

" In estimating the value of the Royal Military College of Canada, in comparison " with the cost of maintenance, the double aspect of the institution should be borne " in mind.

" 1st.—It provides a body of young men carefully and highly trained, intellectually " and physically, not only with such military education and habits of order, obedience, " and command (due to strict discipline) as is requisite to qualify them to become " thoroughly practical and scientific Officers, but *also*, by the breadth and general " scope of the curriculum of study, to fit them *equally for any civil business or pro-* " *fession, public or private.*

" 2ndly.—The College will, when complete, always have available and ready to turn " out at a moment's notice sufficient cadets (after excluding all under 18 years of " age) to form two companies or batteries as efficient for actual field service, *either* " *as infantry or artillery*, as any troops of from over one to not less than four years' " enlistment, existing, whether as regards discipline, drill, or equipment, and far " superior to ordinary regiments in intelligence and general aptitude.

" Field service for the gentlemen cadets *as a body* is not the *primary* object of " the institution of the Military College of Canada, but the capacity for it is an " *important fact*, the result of its existence, and of the manner in which it has been " organized, and one by no means to be ignored in a country which otherwise " possesses but 300 thoroughly trained and permanently enrolled soldiers ('A' and " 'B' Batteries Canadian Artillery), if only as furnishing an available disciplined " armed force, ready at a moment's notice to temporarily relieve these troops in the

" charge of forts and stores, and free them for support of the civil power, or action " elsewhere.

" Many of the cadets have now been at the Royal Military College for nearly " three years, and I am happy to report my increased confidence that the country " may unhesitatingly rely on the ability and fitness of the majority of them, when " they have completed their full course, viz., June, 1880, to afford her high and " excellent service in whatever position she may demand it from them. Application " has been made for commissions in Her Majesty's Army for the four best qualified " cadets of each term.

" I beg to call your attention to the undiminished zeal, ability, and goodwill with " which the staff generally have continued to assist me in the unremitting and " increasing labours which the circumstances of the College have demanded from " them.

" The tax upon the powers of some has been and is greater than it should be, and " it is for me equally a pleasure to acknowledge my personal indebtedness to them, " and a duty to record the good and conscientious service which they have given to " Canada.

" There are few countries whose national history has not been affected to an im- " portant degree by their Military Colleges, either as complete organizations, or by " their cadets individually, and in a country young but rapidly increasing in power " and aspirations, such as Canada, the influence of her Military College cannot be " other than especially great and beneficial.

" The Royal Military College of Canada is the only institution in which her sons " are brought together under *Dominion* auspices from all her widely parted provinces, " with their more or less divergent interests and blood.

" The ties of comradeship springing from daily intercourse and common pursuits " during four years of the most impressionable period of life, cannot fail to create in " the cadets a strong national instinct rising above provincialism, while, from the " associations of the institution, the appreciation of the even greater citizenship of " the British Empire is strengthened.

" High excellence in anything cannot be obtained without reasonable and ade- " quate expenditure; and half measures and *true* economy are at all times incom- " patible. This is peculiarly the case in educational institutions, which, if the means " to sustain them in vigorous life are wanting, very easily, indeed necessarily, dege- " nerate into unrealities.

" The increased facilities for imparting instruction referred to in this report as " necessary to provide the more than ordinarily comprehensive course of education " which the present circumstances of Canada imperatively demand from her Mili- " tary College, are far *less* than those given to the kindred institutions of any other " country, and so long as this is the case the demand cannot be excessive or extrava- " gant.

" In now submitting the outline requirements of the future, as in guiding the past, " of the College, I have assumed than nothing less than high excellence is desired or " will be tolerated.

" I have the honour to be, Sir,
" Your obedient servant,
" E. O. HEWETT, Lieutenant-Colonel, R.E.,
" *Commandant, Royal Military College.*"

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